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AMERICAN VETERINARY REVIEW.

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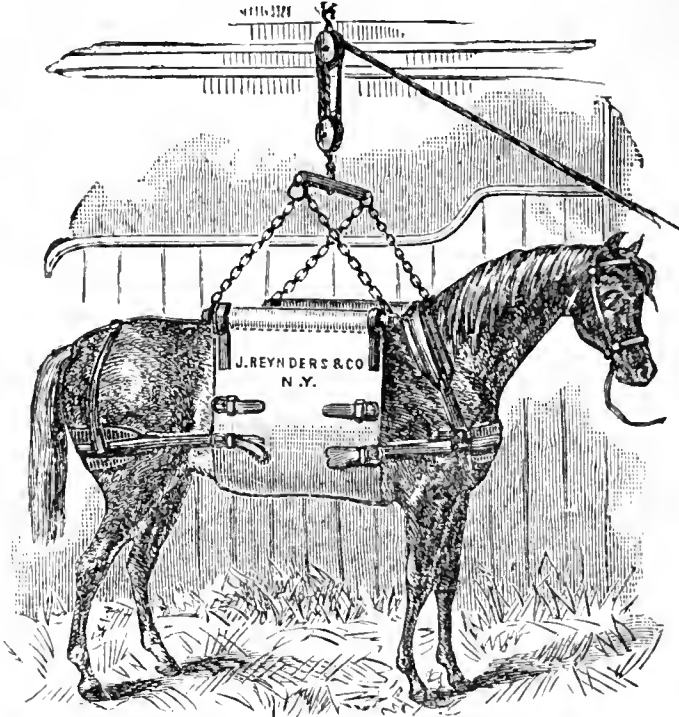
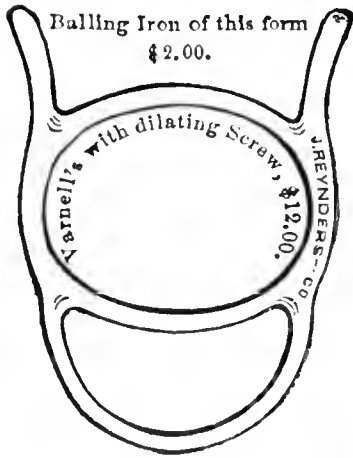
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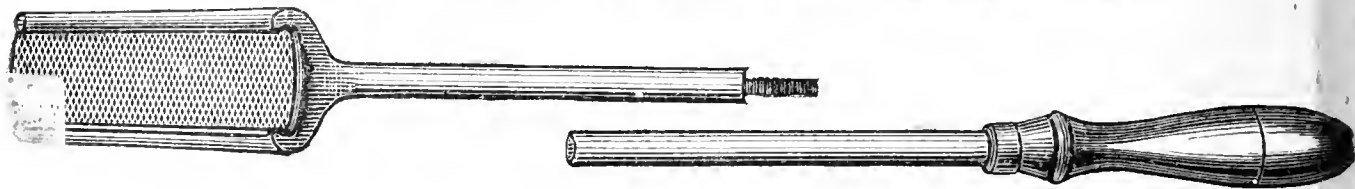
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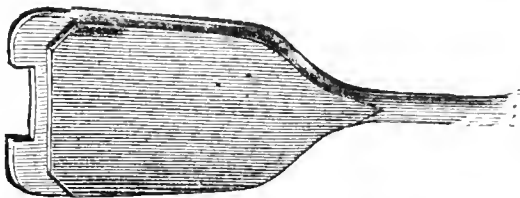
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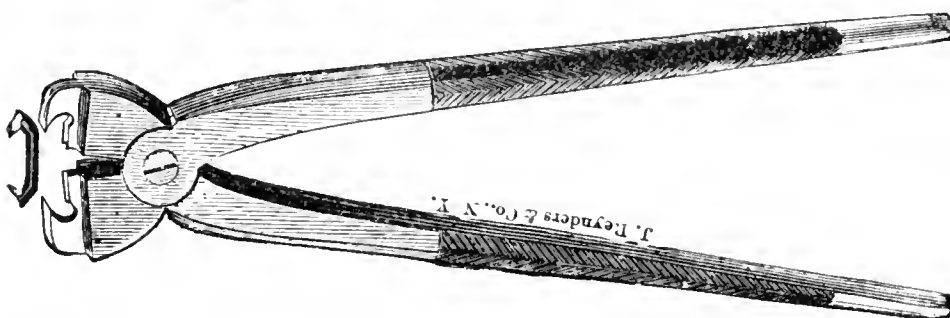
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APRIL, 1886.

EDITORIAL.

Our tenth volume—the past and the future. The organ of the profession—not of this or of that institution, but of the veterinary body at large—of all veterinary societies, whether National or State—not so much, perhaps, as it is willing to be. The United States Veterinary Medical Association—the March meeting—its failure and its cause and means of relief. Our new volume departure. Extracts from home agricultural papers—Pasteur's vaccine in hog cholera. Errors to be noticed in the reports. Parturient apoplexy. Use of cocaine. Another effort by the army veterinarian. Appointment of Prof. Chauveau—objections from the French “chronic kicker”—the need of a similar position in the United States. New legislation in Washington.

We are about entering upon our tenth year of publication, and it is not without a feeling of pride that we emerge from what may be denominated the period of our adolescence, and realize that in a few months, at the farthest, we shall have quite survived the experimental stage, and achieved that era of journalistic existence which warrants a gratifying assurance of durability and permanence. Those of our friends who recall the circumstances which accompanied the establishment and early progress of the REVIEW, and remember the signs of weakness and hesitation betrayed in some of the earlier numbers, will be glad to recognize the success which has crowned our efforts to elevate it to its present position of credit and usefulness; and while they look with satisfaction upon the progress thus far realized, it becomes a legitimate enquiry, What may be reasonably anticipated of our future?

The answer to this query lies largely with the members of our profession. If our efforts have proved successful, and the REVIEW has become what it is to-day, the true organ of veterinary intelligence and expression of veterinary science in the United States, it is not to our unaided exertions that this is due, but rather to the help we have received from our *confreres*, from veterinarians throughout the land; and by them mainly is the future of our organ to be defined and determined. The element of greatest force in the REVIEW consists in the fact that it is designed to be, and intends to remain, the organ of the PROFESSION; that its endeavor has always been to escape the imputation of lending its support to any single institution, whether this or that college, or to any specially designated veterinary body or interest. No existing organization has been denied the hospitality of its pages; the veterinarian body of the whole country has been welcome to express their views in its columns, and room has been found for whatever statement or opinion any of our organizations have desired to make public. If, as in some exceptional cases, advantage has not been taken of the opportunity we have so freely offered, the fault has not been ours; and if the National Veterinary Association has failed to communicate with us in the past, we hope that in the future a better feeling will be cherished and the silence of which we now complain terminated.

With due respect to our origin, we have always experienced a peculiar pleasure in referring to the United States Veterinary Medical Association. Conceived and born in the midst of that body, we have felt in duty bound to respond to its suggestions and to register the work done by so large a body of veterinarians. How much we regret that on the present occasion we have so little to say of their last semi-annual meeting, which should have been held in Boston last month, and that practically no meeting was held—or rather no official and legal meeting. A few, very few, members from this State (what one might call the “old stand-bys”), were present and answered the roll call; some dozen or more members from Massachusetts, Maine, Rhode Island and Connecticut were also in attendance; but with all this, nothing was or could be accomplished. The meeting had not been legally

called, members had not been properly notified, and while more than a large quorum was present, no business could be transacted. Where does the blame belong? Undoubtedly to a lack of interest on the part of those whose duty it was to see that not only timely notices were issued, but who should also have made it their duty to arrange properly the details of the business likely to demand attention, and to see that those who at a pecuniary loss from the suspension of their practice were willing to submit to personal sacrifice and undergo the fatigue and expense of travel for the sake of being present, should have an opportunity of deriving some commensurate advantage from the occasion.

These are questions of vital importance to this as well as to other associations.

The United States Veterinary Medical Body cannot afford a repetition of the fiasco made in Boston, unless they are prepared to surrender their claim to be the oldest, best and most active organization of the country.

In our new volume we intend to take careful cognizance of the progress of veterinary medicine as indicated in the agricultural papers. In inaugurating this new departure, it is with regret that in reprinting an article from so influential and respectable a paper as the *Breeders' Gazette*, we find in the article relating to the value of Pasteur's vaccine in hog cholera, errors which we cannot overlook. In justice to Mr. Pasteur's valuable discoveries we feel it to be our duty to correct some of these—we trust, involuntary—errors, as they appear in the extract referred to, and which, were they to remain uncorrected, might result in serious injury to the interests of the swine breeders of the country.

The vaccine matter, with directions for the manner of using it, was furnished to the State Veterinarian of Nebraska *by ourselves*, with the design, not of testing the value of the process, but of proving the efficiency of the vaccine matter as imported directly from Europe, and ascertaining whether it would prove, after importation, as successful as it is in Europe. Can it be transported by steamer after a few days of preparation, and cross the Atlantic, passing, with more or less delay, through the custom house, and, after several days again added to its age, be carried

from New York to Nebraska, subject, perhaps, after reaching its destination, to still more delay before being tested, and then prove effective and successful? We doubted this when we sent the vaccine to the author of the report, and we notified him of our fears. We are not, therefore, surprised at what he publishes to-day, even though he wrote to us: "I believe the inoculation will prove a grand success." We did not believe it to be possible, and we doubt whether Mr. Pasteur himself entertained much hope of its success. He had told us that he had known the vaccine to keep good for five weeks. The matter used in the experiments in Nebraska must at least have been prepared about the twenty-fifth of September, and it was not earlier than the second of November that the first inoculation was performed. The loss of the value of this vaccine is not surprising. Its success, under the circumstances, was an unreasonable expectation, and to conclude that the "inoculation theory" is wrong, is, to express it very mildly, an error. If the cold logic of fact (a single fact) seems to disprove the theory in Nebraska, what shall be said of the same logic of facts—in the plural—which prove it to be almost a *certain success*, and almost the *only prophylactic measure against hog cholera* in most of the countries of Europe, whenever the process has been repeated with *fresh vaccine*?

Parturient apoplexy is a disease which interests all of us veterinarians and to which the agriculturist cannot remain indifferent. We profess to know a good deal about it, or at least much has been written on the subject. In the present number we have printed two articles, one of which was read before the Ohio State Veterinary Association, the other being a translation of a paper in French, received by us from St. Louis. We hope that both will prove interesting to our readers, and while they may greatly differ there is no doubt that great advantages may be derived from their perusal.

The use of cocaine in veterinary surgery, and the advantages attending it, receive another illustration in the paper which will be found in the present issue, from Dr. James. The aid of cocaine in performing the simple operation of neurotomy, shows but one of the numerous occasions upon which the surgeon may derive

benefit from its use. There are, without doubt, many cases which could be recorded of the advantages attending its use, but we ought also to hear of the danger of its application when combined with general anæsthesia. In human surgery the danger of the complications which attend the local application of this potent remedy, when followed by general anæsthesia, in case of failure of the effects of the first administration, are well known. These are facts with which the veterinarian ought to be familiar, and he should especially remember that the previous use of cocaine precludes the immediately following administration of chloroform or ether.

The *army veterinarian* finds in us once again, as he always will, an ally and assistant in his endeavors to obtain from the authorities in Washington a recognition of the rank and position to which he is so clearly entitled. In our last number we expressed our opinion in the matter, and proffered our advice to our unfortunate *confreres* in the army, and at their request we now gladly publish the circular handed to us, and which treats of the defects of the present rules for the government of the veterinary service. The paper also refers to the necessity of the reforms they suggest. This circular ought to receive the endorsement and support of every veterinary organization and every individual practitioner in the country.

Appointment of *Prof. Chauveau*.—The melancholy death of Henry Bouley had left an important position vacant in France, that of General Inspector of the veterinary schools of that country. And, notwithstanding a strong but questionable protest from the worthy editor of the *Echo*, who is pretty well known by French veterinarians as what we call in the slang vocabulary of this country, a “chronic kicker,” Professor Chauveau has been transferred from the directorship of the Lyons school to the vacant position. Such an appointment may excite but little interest on this side of the water, but when we heard of it we could not avoid the reflection, how advantageous it would be if such a position could be created in the United States. Let us for a moment reflect upon the benefits which might be derived from it, and especially how good a thing it would be if

the movement which has been inaugurated for the adoption of a uniform curriculum in the American veterinary colleges should be brought to a possible and successful result. We do not know that we shall live to see the day when the veterinary colleges of America will have a uniform system of education and of examination, but if this should ever come to pass one of the natural consequences of the new departure will necessarily be the creation of such a position, and the election of some gentleman to fill it, with all the qualifications and requisites usually found in those who occupy similar places in Europe.

New Regulations amending the act creating the Bureau of Animal Industry are to be presented to Congress. Whether they will improve the workings of the Bureau and facilitate its business, we do not know. At first sight it seems to us more like an addition to the red tape system already existing, than a means of securing any essential benefits to this so often, more or less justly, criticised institution. Our confreres in Washington might tell us something about it.

ORIGINAL ARTICLES.

DISEASES OF THE HEART IN DOMESTIC ANIMALS, ESPECIALLY THE HORSE.

BY FR. BLAZEKOVIC.

(Translated by J. C. Meyer, Sr., V.S.)

Continued from page 504, Vol. IX.

IV.—RHEUMATIC AFFECTION OF THE HEART.

In rheumatic diseases of the organism a rheumatic affection of the heart is often established, which naturally concentrates in the serous membranes of the heart. The rheumatic affection of the heart most frequently observed is that which is concomitant with laminitis, articular rheumatism and constitutional diseases of the joints in fillies.

In increased action of the heart, the heart-beat is throbbing and full; and if caused by laminitis it is strong, quick, seldom

intermittent, often oscillating. The pulse generally averages 60-80, but may rise to 100-120. Auscultation indicates a violent influx of blood which is interrupted by murmurs, produced by impediments. The sound is sometimes wheezing and fluttering.

The intensity of the symptoms and the changes during the course are closely connected with the issues of the corresponding affection, and can properly be regarded as an essential part of the disease.

Following in order, we might here discuss that second form of heart affection which appears acute and inflammatory, regardless of the cause or already existing effects.

The result of such affections is either a favorable change and cure, or increase of the inflammatory process to the highest degree and death; or a partial restoration and incomplete cure with development of chronic, pathologic and organic alterations in the heart, which latter condition is known under the very comprehensive term, "Defects of the Heart."

A characteristic of all acute inflammatory affections of the heart is the ever present feverishness of the whole organism, whereby often danger of death suddenly occurs. It is not absolutely requisite that such affections should be considered the cause of death.

We shall now describe such diseases of the heart as are based upon inflammatory action.

(A) INFLAMMATION OF THE PERICARDIUM.

Inflammation of the pericardium (pericarditis) is without doubt, the most prevalent of heart diseases among domestic animals. It is also the least difficult to diagnose, as the symptoms are clearly defined and the diagnostic expedients can be most readily applied.

At the outset of the disease the difficult and accelerated respiration (to 30 per min.) becomes conspicuous upon the slightest movement; however, the physical examination will prove that no lung trouble is present. A violent fever will facilitate the diagnosis before additional characteristic symptoms appear. The variable severity of the fever at short intervals must not be

overlooked, as it affords almost positive evidence of the correctness of the diagnosis. Hence, we shall notice an alternating rise and fall of the pulse, whose beats vary from 80 to 100 and 110. The fever, which in the morning is less, in the evening more aggravated, reaches a critical point during the night. The pulse at the same time is tense, though equal in beat, and only then intermittent if occasional changes of the heart be present. If the inflammation be limited to the pericardium only, the pulse will be found accelerated and changed in the manner described; still the pulsations are always regular, succeeding each other at equal intervals.

At the beginning, the heart-beat throbs violently, but is clear; as the disease progresses, if exudation sets in, a smaller or stronger back-stroke is easily detected by the hand. The phenomenon of the back-stroke is undoubtedly the result of the resistance and obstruction produced by the newly formed exudation.

Coughing, mostly short and dry, occurs occasionally at the beginning of the disease, during the hyperæmic as during the congestive stage; later the cough disappears gradually. At the very outset of the disease the temperature of the body changes frequently after the inflammation is already decided. After ten to twenty hours a high fever sets in, which fluctuates between 38° and 40° Cels.

On auscultation a friction sound is perceptible, which is also felt by placing the hand on the cardiac region, especially if the pericardium in the stadium of exudation be covered with effusion. The more the serous and plastic exudation increases during the course of the disease the more conspicuous are these sounds, and according to their nature it is possible to discriminate the kind of exudation. If the friction sound be prominent the plastic exudation predominates, while if the serous exudation predominates a flapping sound is heard. According to the quantity of the exudation the pericardium distends, generally toward the base. If the serous effusion fills the pericardium the percussion sound is dull; of course, only at the base at first, then higher up and more extended. In this condition the cardiac sounds are weak, the heart-beat faint and less clear. If only simple pericarditis be

present the course may change variously; often, after a short illness, death occurs; often, before excessive exudation takes place, restoration may ensue in an astonishingly short time.

In fatal issues œdema of the lungs and hæmostasia are almost constant appearances, owing to the obstruction in circulation. In cases of recovery the exudation gradually becomes dissolved and resorbed. As it diminishes the friction sound also disappears with the ruffled smoothness of the pericardial leaves. The character of the pericardial fremitus is dependent upon the degree of smoothness and roughness of the membranes. These sounds are not consonant with the cardiac sounds, which occur within the interior of the heart; for they seem to drag after the cardiac sound, while the sounds within the cavity of the heart correspond with the rhythm of the heart-beats. The pericardial friction fremitus is dependent upon the roughness and friction of the leaves, whereby the cardiac sounds are less clear and scarcely audible in consequence of the exudation. The discrimination of murmurs in the stadium of exudation is of diagnostical value.

Sometimes the resorption of the effusion progresses less favorably; the process becomes chronic, and by slow but steady increase of the effusion, dropsy of the pericardium is finally developed, which, associated with excessive dyspnoæ and violent symptoms of the heart, cause death.

More frequently than has as yet been acknowledged, a form of traumatic pericarditis is met with in ruminants. It is developed by the penetration of foreign bodies through the first stomach into the pericardium, and produce all the symptoms of pericarditis. If the disease does not set in with too great severity and violence, as is nearly always the case after taking cold accompanied by rheumatic affection or pleuritis, prognosis is favorable if assistance is near at hand.

Although pericarditis is at all times recognized as a serious critical affection, its traumatic form will always terminate fatally.

Owing to its profuse exudation, inflammation of the pericardium can give rise to general dropsy. Such dropsy extends to the thorax and cavities of the abdomen, and there produces compression of the lungs. The physical signs of dropsy differ from

those of pericardial primary effusion, inasmuch as no friction sound occurs as in hydropericardium. Quite frequently hydropericardium occurs as consecutive disease of dropsy of the chest and abdomen.

(B) INFLAMMATION OF THE MUSCLE OF THE HEART.

Myocarditis.—During life it is scarcely possible to diagnose myocarditis, and in cattle can be merely conjectured. It appears either independently or associated with other diseases, but generally it is generated by pointed foreign substances, which penetrate the muscle of the heart from the stomachs. Now and then the foreign substance in its course from the reticulum gradually works its way into the wall of one of the ventricles, even to the partition of the ventricles; as a matter of course, in such a case pericarditis is always present. We have already discussed in what manner the penetrating foreign bodies lodge in the fleshy substance of the heart.

The essential perceptible symptoms from which a myocarditis can be subjected are, groans, debility, repeated staggering, chills, high temperature and fever. A constant phenomenon of the heart-beat is irregularity of the rhythm, but equality in strength. The pulse is always small, quick, but very excited, and averages 100 and more beats per minute. If at a later period insufficiency of the valves appear with it, it may be assumed that the anomalies of the valves had already existed, and myocarditis has been added to it. (Provided no traumatic cause can be traced.)

If myocarditis be developed in connection with enlargement of the heart the physical examination will show, upon percussion, a corresponding dull sound. On auscultation a change in the cardiac sounds can only then be established if pericarditis and endocarditis, or diseases of the valves, interfere. An ever present violent palpitation of the heart which, irregular in rhythm, changes to a tremulous, flickering, irregular action of the organ, is very easily ascertained, and is almost characteristic for myocarditis.

Prognosis is unreliable.

The issues of the affection are generally hypertrophy, atrophy, expansion, in short, intensive changes in the fleshy substance of the heart.

(*To be continued.*)

PARTURIENT APOPLEXY.

By A. ROUX, V.M., St. Louis, Mo.

The opinion I had formed some years ago respecting this disease might have become settled and fixed, but that in the discussion of so important a subject it becomes necessary to consider and review the various theories concerning it which have been entertained for the past century, and brought down to the present time; and as the result of long investigation it has been, at last, classified with curable diseases.

The following seems to be a correct history of the affection which sometimes follows the parturition of our domestic animals.

It was in 1718 that Strohler wrote respecting the puerperal fever of women, and that such veterinarians as Favre, Hering and Fuchs recognized it as inflammatory, on account of the collapses and the paraphlegic form which accompanied it. For more than a century, and almost without distinction, it was treated as metritis, metroperitonitis, and even septicæmia, whose starting point was in the genital apparatus, and which resulted from putrid infection following parturition.

In 1817, C. Viborg made another important study of this disease, of which the prognosis was almost so uniformly unfavorable, and confirmed the opinions of his predecessors, who until that period had agreed to consign it to a prominent place among intractable disorders of which a fatal termination might be considered the usual sequel. The true etiology of the disease had not then been mastered, and the modes of treatment recommended were various, and of course, with widely differing results. Some practitioners claimed a percentage of recovery from fifteen to twenty-five per cent., but this degree of success was quite offset by the unfavorable reports of others, which greatly reduced the average and quite neutralized the exceptional good fortune so claimed.

Vitular fever has been well described by Heiss, Garreau, Carsten, Harms, Spinola, Roell, etc., and was proved to be quite a distinct disease from puerperal fever in women, on account of the differential treatment employed in both varieties.

This disease may be affirmed to be peculiar to the cow, although it has been sometimes observed in dogs and goats. It usually appears a few hours after delivery, but more commonly two or three days elapse before its appearance. According to some writers, it has been observed after twelve or fourteen days. I believe, however, that these must have been cases of metritis, metroperitonitis or septicæmia.

When the disease shows itself soon after parturition, it is ushered in by manifest symptoms, such as: intermittent chills of short duration, with coldness of skin; a degree of stiffness of the body; sometimes spasmodic contractions of the extremities, forming the first sign of the paraplegic variety; a cessation of rumination; an anxious and painful expression of the face; restlessness, shown by flinging the tail about; a disposition to strike with the horns; straining in urinating. After a few hours the animal lies down, in sternal decubitus and generally on the right side. It is usually not until this moment that the veterinarian is called upon for assistance, and this is to be regretted, for the disease has by this time made dangerous progress. Besides, usually the patient has already been dosed with various drugs, which, if she is to be killed, have rendered her meat unfit for human consumption. It is for these reasons that these first symptoms ought to be well known by agriculturists and breeders, in order that they may not neglect to call assistance upon the earliest appearance of danger.

The animal, still lying on her right side, looks toward her left flank; there is great depression of the whole organism; the animal resembles an inert mass, almost unconscious of whatever may be done to her. This condition is properly called by Fabre, the collapse of parturition. There is great loss of strength: the eye is dull; the pupils are largely dilated; the cornea is motionless; the ears are drooping and cool; the pulse small and quick, from 80 to 90; the temperature has risen two or three degrees; the animal moans and grinds her teeth; the respiration is stertorous; the mouth is filled with abundant saliva; the visible mucous membranes are pale, except those of the genital organs, which are always more or less tumified; the vagina is dry; constipation is persistent; the manure coated; at times there is diarrhœa; the

milky secretion has stopped ; there is general paralysis ; the rumen and the intestines have lost their peristaltic motions ; the circulation is increased ; the heart bounds ; the respiration is slow ; there is first paraplegia, and afterwards convulsions. Breuter, Gablis, Donnellus and Festal have seen the paraplegia absent, and the cases then were complicated with amaurosis.

The prognosis, though varying, and always very serious, must in some cases be guarded, as while fatal results may take place in a few hours, recovery has so occurred in a short time. The thermometer may assist considerably on this point, as the rapid dropping of the temperature, after a sudden elevation, is generally a bad omen.

Pathological anatomy.—*Nature*—The neglect of post mortem examinations of animals which have died or have been slaughtered, may account for the ignorance of the nature of this disease in times past. But since 1856 it has been established that vitular fever rarely arises from traumatic lesions connected with delivery, since the disease has made its appearance as well after natural parturition as after the most difficult case of distocia.

Viborg, Roell, Stockfelt and Zundel have frequently found the uterus greatly enlarged, with its walls thickened and flabby, and the mucous membrane much injected. Decomposed lochia have also been found in the organs, with foetid sanious fluid, and a mixture of blood, mucosities and coagula, with remains of the foetal envelop ; the cotyledons are large, dark red and resembling small sponges, and the veins of the uterus are varicose, containing small clots, probably the starting points of embolisms in various parts of the body.

Roell alone, says he found phlebitis and pus in the veins. The ovaries and fallopian tubes are altered ; the peritoneal cavity is filled with purulent serosity or contains floating masses of coagulated fibrine. This has been attributed by some to a sort of metastatic action, produced by the milk, and on this account Roell had named the disease milk fever.

Nothing abnormal is found about the nervous centers ; the same being true of human puerperal fever. Sero-purulent effusions of the pleura and of the meninges have been noticed by

some observers. In vitular fever there is always an extraordinary repletion of the venous system, which is gorged with dark blood, which is especially abundant in the portal system. The causes of this condition are still unknown. The spleen is enlarged; the cavities of the heart empty. Besides the local lesions of the genital organs, evidence of paralysis of the viscera are always found. The third stomach is filled with dry packed food, producing constipation. The bladder is always distended, but flabby and empty.

Many have considered the disease as inflammatory in its nature, but it is more than probable that there is a peculiar condition of the sympathetic system, extending to the spinal cord. Still, the symptoms and manifestations are so varied that the most vigilant mind has the most difficulty in finding a true explanation of the nature of the disorder.

In human medicine it has been admitted that the morbid element, which enters the economy, or the toxic principle which alters the blood and produces puerperal fever, either originates in the economy or is introduced from without. It has also been observed that this disease may assume an epidemic character. Such is not the case in animals, and though epizootic abortion may have been accompanied by septicæmic manifestations, these might be otherwise explained: for example, by the manipulation of the accoucheurs, carrying the morbid infesta from one patient to another.

A plethoric state, high feeding, and peculiar hygienic conditions have also been referred to among the causes of the various and numerous manifestations of this affection.

Treatment.—Almost all kinds of treatment have been tried and found unsuccessful. Antiphlogistics, and among them bleeding, were recommended, thus depressing a patient already in want of vital forces. Mucilagenous drinks and salines have also been tried, without good results.

The Germans advise the use of croton oil; the French prefer aloes, in thirty or forty gramm doses, with emollient injections. Nux vomica, with tartar emetic, as well as calomel, have been advantageously employed by many in stimulating the vermicular

action of the intestines. English veterinarians prefer spirit of turpentine internally. This drug has the great inconvenience of rendering the meat useless, in case the animal is slaughtered.

Ether, valerian, assafoetida and many neurostenic drugs, combined with alcohol, have given good results.

The external treatment has been no less varied. Wrapping the animal in large wet sheets; the application of warm compresses, stimulating friction, ammoniacal liniments, turpentine, mucilagenous or alcoholic injections in the vagina, or in preference a solution of permanganate of potassa or phenic acid, are also indicated.

All these seem to be more or less reliable, and the losses still average generally between eighty and ninety per cent.

From the publications made in the *Recueil de Medecine Veterinaire*, much success seems to have been obtained with the treatment followed by Messrs. Hartenstein and Mathé.

This treatment, published in *l'Hydrotherapie appliquée aux animaux*, is a mixed treatment whose agents are douches of cold water on the head and loins, repeated bleedings and drastic purgatives. The results obtained by the author in several cases induced him to present it to the profession, and a large number of recoveries have since been recorded, as well by the author as by many veterinarians in France.

We have ourselves employed the Hartenstein treatment in many cases, and it has always given us full satisfaction. It is on account of this success that we have thought proper to present the subject to our confreres and to the agriculturists and breeders of this country.

PARTURIENT APOPLEXY.

Paper read before the Ohio State Veterinary Medical Association.

BY W. F. DERR, V.S.

The subject I am about to bring before you for discussion is a disease called by the dairyman and farmer milk fever, or dropping after calving; by the more scientific men, parturient apoplexy,

parturient collapse, puerperal fever, etc. Few diseases affecting animals have received a greater amount of attention or have given rise to more different opinions as to their nature than the malady to which we have given the designation of parturient apoplexy. Veterinary literature, as far as I can find, teems with the descriptions and discussions relative to the disease, and still most eminent pathologists are far from unanimous in their opinions as to the nature of the disease. The great number of names given it is evidence of the uncertainty which has prevailed and now prevails with regard to it. For instance, it has been called vitulary fever, vitulary apoplexy, vitulary paralysis, by the French, calbit feber by the Germans, milk fever, puerperal fever, parturient collapse and parturient apoplexy by the English speaking people.

PATHOLOGY.

A superabundance of blood in the system immediately after calving, which instead of producing, as in course of nature it should, proper support for its offspring, is retained in the system, surcharging the various vessels, from which the results are pressure on the brain and nerve centers, producing coma and, if not relieved, death.

Gamgee, on this subject, considers that there is present in the blood a specific element that causes the malady.

Some authorities attribute the disease to an accumulation of milk-producing elements in the blood, giving rise to fever, and blood-poisoning, to a sudden overloading the system with blood, causing nervous disorders.

Finlay Dun describes it in following words: "The large quantities of blood that have until the time of parturition been nourishing the calf, are diverted with their new channels for the production of milk. If at this critical period the bowels are constipated and the mammary gland does not at once take on its functions, this superabundance of blood soon becomes a source of mischief; it produces congestion and subsequently inflammation of the brain and nerve centers; serum is poured out, causing by its pressure impairment of motion, sensation arresting secretion and excretion, a sluggish and most imperceptible pulse, and slow and stertorous breathing."

Professor Williams says that the particular congestion of the brain and its meninges is determined by the state of mental excitement which is always present at this period, an argument borne out by the fact that the removal of the offspring from the mother is a fruitful cause of the so-called milk fever, but such an exciting cause is not essential. Surely, this excitement must be greater with the first or second calf, when the disease is seldom or never seen, than with the third, fourth and fifth, when it is so frequent.

Sanson says the collapses of parturition is the consequence of a sudden disturbance in the physiological condition of the uterus after parturition, consisting of the sudden removal of blood which congested the organs at that time, as during gestation a large portion of the blood is diverted toward the pelvic region where the uterus is lodged. After parturition the mucous membranes and cotyledons of the organs have lost their functions, and the enormous quantity of blood they contained is suddenly thrown into the circulation, surcharging the neighboring vessels beyond measure and producing collapse. In proof of this, at the time of post mortems he made, Sansom affirms that the mucous membranes and cotyledons were found bloodless and of a pale yellow color.

Weimer is of the opinion that the vascular system is involved, as manifested by the diminution of temperature and the lacteal secretion, as well as the nervous system shown by general depression and loss of sensation, inactivity of the spinal cord in the dorsal region, difficulty in digestion, quickened heart's action, and slowing of the respirations. And the causes he believes to be bad diet and pressure of the foetus on the stomach and intestines, diaphragm vena cava and posterior aorta; a too rapid evacuation of the contents of the uterus bring about a fall of the abdominal viscera, dilation of the posterior aorta, and a slackening of the circulation, etc.

Another theory, that of Lafosse, is that the malady is due to the circumstances that the milky fluid secreted by the cotyledons and absorbed by the chorionic villa for the nutrition of the foetus, being no longer separated from the blood after parturition, remains in the circulation and accumulates there until the mam-

mary gland eliminates it. When these glands act promptly, the febrile movement is imperceptible or almost *nil*, but if they are slow in secreting, there arises a more or less morbid disturbance, due more especially to the presence in the blood of a product foreign to its normal composition.

CAUSES.

Plethora : Animals that receive no exercise, sudden changes of diet, and stabling just before parturition, costiveness, eating the foetal membrane, removing the calf from its mother, are said to be the causes. The development of lactation has a powerful influence.

When the powers of secretion have reached a certain point, the cow becomes predisposed to an attack. I have never seen a case in the primapara, and I cannot remember of seeing one before the third calf. In twenty-nine cases reported by the Haycock, three occurred after the third calf, five after the fourth, sixteen after the eighth. Temperature is supposed to influence the production of the disease, especially exposure to cold. The suppression of the cutaneous functions and the determination of blood from the surface of the body to the internal organs must favor congestion of these organs. Such as currents of cold air, lying on the ground, and drinking large quantities of cold fluids immediately after parturition, have been looked on as causes. Let the causes be what they may, I think the more rapidly the womb contracts and attains its normal size, the more danger of parturient apoplexy, and the longer it remains relaxed the animal is less liable to take the disease.

It attacks principally cows that are fat and rich milkers, and if there is one breed more susceptible to the disease than another, it seems to be the Alderney.

In all cases there seems to be an easy delivery, little loss of blood or nervous expenditure, and I think it is more noticed in the warm than in the cold seasons of the year. A cow having one attack is very liable to have another at the next time of calving.

It usually occurs at the third and later periods of parturition, seldom before, and it is said to never follow difficult or protracted

delivery, uterine hemorrhage, and even by some authorities, it is said to never follow retention of the foetal membranes; but this I have not found to be the case in my practice, as I have seen it before parturition, also in the act, and have frequently seen it in cases of retention of the foetal membranes. One of the exciting causes is the milk-forcing system. A few days before and right after parturition the cow usually gets in our country a bucketful of warm feed in the way of from two to three quarts of flour or mill feed, with warm water, two or three times a day, with an addition of some coarse feed, in order to have a large production of milk. Now this kind of diet forced on an animal which is not only rich in its products but has also a constipating effect, is not only calculated to produce functional derangement of the digestive organs, but constitutional and sympathetic disturbances of the brain and nerve centers, and as a result, apoplexy.

Prognosis.—The prognosis in this disease is generally difficult if not unfavorable, as it is fatal in the majority of cases. There are cases that look trifling at first which have a rapid termination, while others that look desperate, with alarming symptoms, quickly recover.

My prognosis is usually unfavorable, if the owner wants my opinion. If he does not, I give none from the commencement of the attack.

There is no absolute case, I think, where we can positively say whether we can cure or whether death will take place from the commencement of the attack, and it often happens that the result contradicts the prognosis. The earlier the disease takes place after parturition, the more serious the case may be considered, while the longer it takes to come on, the less likely to prove fatal. I always think it a good omen if the disease takes place from two to three days after parturition. When it appears in less than twenty-four hours after the act, it mostly or nearly always proves fatal, or when the attack is very sudden and powerful, when there is marked coma, rapid and general loss of heat and great distention of the rumen, loss of vision, violent convulsions, deep mucous rales in the trachea, eyes insensible to the touch, dropping of the lower jaw, oral breathing, relaxed sphincter,

and total suppression of milk. The favorable indications are when the temperature is retained normal in body and limbs, and when there is the slightest elevation, when it is low, when the urine is either spontaneously expelled, or by the index finger being introduced into the meatus urinarus.

It is also a very favorable symptom when the feces are passed. A return to consciousness is also a very good omen, and particularly when she takes notice of her calf and makes attempts to rise and the milk begins to reappear.

In some cases there is a slight recovery and then a relapse from various causes, and death takes place. I always think the longer the disease continues the more hopes of a favorable termination of the malady.

(To be continued.)

HYDROCHLORATE OF COCAINE IN NEUROTOMY.

By H. F. JAMES, V.S., St. Louis, Mo.

To my old and valued friend, Dr. C. C. McLean, of Meadville, Pa., is due the honor of introducing cocaine to the profession in connection with the operation of neurotomy. Since his article appeared in the REVIEW, I operated on a bay horse ten years old, affected with incurable navicular disease, first injecting about 25 minims of a four per cent. solution of cocaine a little above the place of incision. The local anæsthesia was perfect, the animal lay quietly, and the nerve could be picked up and squeezed without the slightest evidences of pain; section produced no struggling whatever. I injected each side of the leg before cutting the skin. The wounds healed quickly, and the owner was well pleased with the result.

Neurotomy is acknowledged to be the most painful operation we are called upon to perform, and heretofore, owing to our reluctance to use chloroform on horses, their sufferings were unavoidable. Here we have a drug, cheap in price, easily used, which does away with all this needless suffering, and enables us to do the requisite cutting neatly and quickly; therefore I think

I am not speaking too strongly when I say, that the hypodermic injection of cocaine will soon be accepted by advanced veterinarians as an integral part of the operation.

FISTULA OF STENON'S DUCT.

BY THE SAME.

About the beginning of the year my advice was asked concerning a running sore on a mare's jaw, which had existed for eight months. Examination proved it to be a fistulous parotid duct, due to implication in the abscess of strangles. The portion between the fistulous opening and the mouth was completely obliterated. When fed on hay the saliva was poured out in great quantities, in spite of which the mare, a handsome bay, valued at \$350, was in good condition.

I thought first of trying to establish an artificial duct, but reflecting on some previous rather disappointing trials by this method, I resolved to adopt a different course. A friend, an M.R.C.V.S., and a graduate of Alfort besides, suggested excision. I told him I would try Williams' method of obliteration, but he shook his head and predicted abscesses, sloughing of large portions of skin, etc.

The owner did not want the mare laid up long, nor did he want her scarred if possible. I am as good an operator as the average, but I confess I did not like the excising treatment; the arterial and venous relations of the gland seemed to entitle it to a certain amount of respect. I had a No. 3 Davidson hard rubber uterine syringe containing half-an-ounce, with a very long nozzle. Enlarged the fistulous opening a little and passed a soft uterine probe up the duct, and got the angle; next dipped the nozzle of the syringe in hot water and moulded to the probe; placed a twitch on the mare, filled syringe with Williams' injection, oiled the nozzle and passed several inches up into the duct, though it was a rather tight fit. A good assistant compressed the parts around and below the nozzle, so that there would be no back flow, and kept the duct compressed on withdrawing nozzle;

managed to inject about $1\frac{1}{2}$ ounces of the fluid, when the resistance became too great. Next day parotid and orbital regions greatly swollen, eye entirely closed on that side; second day gone down a great deal, and in a few days only the swollen outlines of the parotid gland to be seen. A week after rubbed in a little Ung. Hyd. biniod to hasten affairs, and allowed dry feed for first time since operation. A few drops of semi-purulent discharge came from the fistulous opening for some days, then totally ceased. Three weeks after the operation the owner was driving, the opening healed up, the obliterated gland very slightly swollen, and no scars to impair her value or appearance.

An ordinary small nozzled syringe will not do to force the fluid into the farthest ramifications of the gland; the Davidson syringe exactly fills the bill.

Theoretically the obliteration of a parotid gland should be followed by all manner of awful consequences: colic from imperfect digestion, loss of condition, etc.; but here was a mare, which for eight months had lost every drop of saliva secreted by one gland, and despite the weakening influences of this constant drain on her system, she was fat and sleek. The functional activity of the other parotid gland had doubtless increased to meet the emergency.

Although this article may provoke a smile from the older and more experienced members of the profession, I would beg to remind them that what their younger confreres need is a knowledge of detail. Fistula of Stenon's duct is not so frequently seen by any of us that we can afford to ignore the experience of others, and it is something, if only a little, to raise one's voice against the apparently needless operation of excision. Williams, whose value as a practical writer is conceded more and more as our years of practice lengthen, merely gives the formula for an injection, and says to use a powerful syringe. Not a word about the choice of a syringe, the quantity of injection required, the condition of the animal's head for the few days succeeding the operation—a verified prognosis of which scores a good point for us with our clients. Only general advice, not a word about these important points, which, to use a slang expression, we are expected to

“tumble to” of our own intuition. This paucity of detail is a radical defect in veterinary literature. We have specialists who are busily engaged in the study of bacteriology and the prevention of disease, but to the routine practitioner every improvement in therapeutics is of vital importance.

To keep pace with the times, to sift the practical from the visionary, medical facts from medical illusions, to encourage individual effort by a proper professional recognition of our original views, so that our best men may have some inducement to publish their ideas, and not keep them locked up within their own chests—this is the road that leads to mutual improvement, and the way to build up a vigorous practical literature. The man engaged in arduous professional work lays his success in practice before the public as a test of his ability; he is imbued with a scientific spirit, inasmuch as he is striving for knowledge, even if it be the at present much-sneered-down-upon branch—therapeutics. If he reads at all during his few spare moments, he looks for something practical; something that will raise his average of success; it is more profitable to him than reading erudite essays on pathological anatomy, studied with absorbing interest, I will venture to say, only by profound microscopists, of whom we possess comparatively few. We cannot afford to follow those visionaries who would like to throw therapeutics overboard, and usurp its place by sanitary science and Utopian ideas of eradicating all disease. Even the ultra-scientific spirits among those gentlemen employed by the Bureau of Animal Industry, in the advent of this era of good health to our live stock, could be pardoned if they placed their hands in their empty pockets and disconsolately whistled “Here’s a state of things.”

REPORT OF CASES FROM THE AMERICAN VETERINARY HOSPITAL.

BY J. SCHEIBLER, D.V.S., House Surgeon.

SUB-PAROTID MELANOTIC TUMORS.

The history as well as the post-mortem examination made in this case furnish an interesting addition to the already crowded history of melanotic growths in animals of a gray color. This subject

has been for a number of years under the observation of Dr. J. Dougherty, of New York City, and was sent by him to the hospital of the college for clinical instruction to the students.

Affected with severe difficulty of breathing, and roaring even when at rest in his stall, this gray gelding, about twelve years of age, had some three and a half years previously presented on the right parotid gland an enlargement, the true nature of which was not then made out, but which, under treatment by severe blistering, seemed to have somewhat subsided. It however, soon appeared to have regained its former size, and continued to enlarge. About four months ago another swelling began to show itself in the left side, rapidly increasing, and extending from the base of the ear down to the lower extremity of the parotid. The enlargements of both parotid glands had assumed the general external appearance of melanotic tumors, and the fact of their interfering with the respiration had rendered any possible treatment out of the question. The poor animal, which was apparently otherwise in perfect health, was destroyed.

From the general condition and age of the patient, and the enormous size of the parotid growths, it was supposed that lesions of general melancæmia would be found on the post-mortem examination, but this did not prove to be the case. On the contrary, every organ of the splanchnic cavity was normal, and no melanotic tumor or deposits could be found in any portion of the cadaver, except those under the parotid glands. Connected together under the cranium, and opening in the guttural pouches, laudable pus of a thick consistency was found. The tumors, when removed and isolated, weighed four pounds for the right, and three pounds for the left side. But besides these lesions, another no less interesting, was discovered. This consisted in a fracture of the long branch of the hyoid bone on the left side, with an absorption of a portion of the bony structure. The two fragments were separated from each other by a space not less than two inches, but remained united together by a long thick fibrous band. This was, of course, independent of the melanotic deposits, but the question might have been asked, with propriety, had not that fracture something to do with the suppurative collection of the guttural pouches.

GUN-SHOT WOUND IN A DOG.

BY THE SAME.

Leisurely loitering on the road in the country, this dog, a large mastiff bitch, of a good and kind disposition, seeing a stranger passing by, and running to him in a friendly way, was received with a shot at the hands of the stranger from a shotgun, receiving a large and ugly wound on the left side of the head.

When first visited by Dr. Coates, that gentleman found an abscess formed over the affected eye, from which a large quantity of pus was allowed to escape; and then an irregular wound was seen over the temporal region, with a fracture of the zygomatic process, which was shattered in several small pieces. The eye was of course, destroyed, and the animal was suffering so greatly, as much from the shock as from the wound, that the prospect of her recovery was very doubtful. She was ordered to the hospital, and admitted on the 19th of December.

When she entered her wound had the general aspect above described, but the animal was so weak that she was unable to walk, or even to stand erect, and had to be carried to the operating room to be dressed.

The parts being well cleaned and antiseptically washed, the loose pieces of bone were removed, the cutaneous sloughs which were taking place were gradually taken off, and carefully applied carbolic dressing was laid over the entire left side of the head. A few days later the wound had begun to assume a better character. The granulations looked more healthy, the pus was less sanious, and the mortified skin, portions of the muscles and of the eye having sloughed away, the animal seemed to have more strength, and now walked by herself from her kennel to the room where she was dressed, and her appetite was improved. Still a tract existed on the posterior border of the wound, which on probing was found to open into a subcutaneous sac, which being incised, was followed by the escape of a large number of small shots, many more of which were afterwards removed from day to day. The wound, however, continued granulating and diminishing in size, and after a few days the patient was discharged convalescent.

When taken home the wound was almost perfectly closed, except towards the inner canthi of the eye, the general condition of the animal being very satisfactory. But in walking, she carries her head sidewise, and looking upwards from the right side. A peculiar nervous condition, which was more extensively marked during her malady, has so much diminished that its entire disappearance is considered only a matter of time.

SARCOMATOUS TUMOR OF THE ABDOMEN IN A STALLION.

BY THE SAME.

The subject of this report was an animal of great value, whose death was a great loss to the breeding interests of the country.

The patient, Oxmore, a bay stallion, owned by General Tracy, was admitted to the hospital of the college with the following history:

During the season of 1884 he covered from thirty to thirty-five mares, but in July, 1885, he gave his services to one only. A few weeks later, some time in August, he had a slight attack of colic, from which he readily recovered. Soon afterwards he was observed to have a swelling of the left testicle, which was followed by one of the same nature on the right. These swellings assumed considerable dimensions, and soon began to extend downwards, until both legs, but principally the left, became involved. Under the treatment of his trainer these seemed almost entirely to disappear, but after a time the swelling of the left testicle began to change, by alternately disappearing and enlarging—sometimes present and sometimes absent.

Dr. Adam and Prof. Law had been applied to for advice, but to what effect could not be ascertained in any positive manner.

When consulted on the subject, Dr. Liautard declined to make any positive diagnosis, unless the patient could be examined, though he stated that it might be a case of either hernia, hydrocele or sarcocele.

The owner then decided to send him to New York, and when entered he was immediately submitted to examination. He was then, apparently, in perfect health, with all his functions in good physiological order. The scrotal region on the left side was con-

siderably enlarged, but when seen through the enlargement, though the testicle was much increased in size, it seemed otherwise to be normal. The spermatic cord was also the seat of swelling. It was not a case of hydrocele. To decide as to the diagnosis of hernia, rectal examination was made. When the hand was introduced into the rectum, it was brought in contact with a large mass, hard and immovable, not painful, situated just over the left inguinal ring. The nature of this large neoplasm could scarcely be made out, though it was probably a sarcomatous growth, and its presence was sufficient to account for all the symptoms exhibited by the patient. Examined by a number of veterinarians, and advice having been obtained as to the proper treatment to institute, the only conclusion reached was that the removal of the tumor was the only indication presented, with a very faint chance of recovery.

The owner being notified of this state of affairs, it was decided to make an attempt to remove the mass, with a proviso to destroy the horse at once, if the operation should prove impracticable, or recovery impossible.

To this effect, the horse was on the 9th of February prepared for the operation. The animal having been thrown down on his right side, and brought completely under the influence of ether, Dr. Liautard, assisted by Drs. Robertson, Lockhart, Johnson, Bell, Dixon, and several others, proceeded to the removal of the growth.

An incision was made on the left flank, about twelve inches in length, starting a little in front of Poupart's ligament, and on one side of the lateral border of the rectus abdominis muscle, and the skin, with the fibres of the abdominal muscles, was carefully divided. This was unaccompanied by hemorrhage. The peritoneum being exposed and carefully opened, the hand introduced into the abdominal cavity came directly in contact with the tumor, and then only could a correct appreciation of its dimensions be obtained.

In preparing for the operation, various means had been provided to facilitate the amputation, which was to be made with the ecraseur. Various instruments of that nature had been prepared.

The chains of the ordinary ecraseurs being generally too short, piano wires, often used in crushing tumors, had been provided, some of them measuring two or three feet in length. Still, none of them were found to be long enough to embrace the mass at its base. Several attempts were made to crush the tumor, both in whole and in portions, but all failed, and the case assumed such a character that there was no doubt as to the ultimate result. The animal would never again get up, even if the tumor were removed, the shock having been too severe, and fatal traumatic peritonitis would be the inevitable termination. The animal, while still under general anæsthesia, was consequently destroyed, and a post-mortem examination made immediately.

The walls of the abdomen having been removed, the tumor was well exposed. It was found resting on the left side of the anterior rim of the pelvis, and pressing upon the superior inguinal ring. It was smooth, round and firm, and adhered to the adjacent tissues by a large base, which measured not less than three and a half feet in circumference. Torn from its attachments and removed from the abdomen, it weighed nearly five pounds, and measured sixteen inches in thickness. A section through its centre showed it to be formed of a largely condensed structure, of a dark greyish hue, of a lardaceous nature, a small portion of which, placed under the microscope, revealed sarcomatous degeneration, probably of some of the lumbar lymphatic or superficial pelvic ganglions.

AMERICAN VETERINARY COLLEGE.

COMMENCEMENT EXERCISES.

The American Veterinary College brought the term for 1885-'86 to an agreeable close by the Commencement exercises, which was held at the usual place, Chickering Hall, on the 1st instant. Notwithstanding that the month had *marched* in "like a lion," and an angry one at that, and the weather was of a character fully to justify one's fears of a scant attendance, the hall, long before eight o'clock, was filled with the officers of the

College, the inchoate graduates, their late fellow students, and numerous friends. The platform was gay with floral decorations, the graceful gifts of many friends, and there was inspiring music by Cappa's band, who probably included a sufficient amount of *galop* compositions to give consistency to the veterinary assemblage.

The proceedings were punctually inaugurated by the entrance of the Board of Trustees and members of the Faculty, followed by the graduating students, to the strains of Steinhagen's "Monarch" March, and when the audience had become quietly seated in their respective places, the proceedings were duly introduced by Rev. Dr. Weston, in an appropriate invocation of the Divine blessing.

Following the official report of the condition and progress of the college, which was presented by the Dean of the Faculty, and in which the important and unique advantages to be secured by patronizing the institution were duly set forth, the principal business of the meeting was consummated by the presentation of the diplomas, which invested the graduating class with the honorable degree of DOCTOR OF VETERINARY SURGERY. The ceremony was gracefully performed by S. Marsh, Esq., President of the Board of Trustees, and when it was concluded, the following gentlemen had become lawfully authorized to supplement their signatures with the comprehensive initials "D.V.S."

Daniel Caswell Ashley, Mass.; Edgar Miles Beckley, Conn.; Lewis Maires Bignell, Pa.; Seaman Bradley, N. Y.; Charles Edward Bridge, Pa.; John Sheperd Candee, N. Y.; John James Cattanch, N. Y.; Edward Alden Child, Fla.; Alphonse Joseph Dodin, N. Y.; Thomas Henry Doyle, N. Y.; Francis Henry Flagge, N. Y.; Frederick William Hopkins, Ireland; Robert Corwin Jones, N. Y.; Charles Kuehne, Ph.G., N. J.; William Joseph Magee, N. Y.; Benjamin Franklin Minich, Pa.; Theodore Wilson Moyer, Pa.; Maurice O'Connell, Mass.; Aaron William Radley, Pa.; Archibald Kay Robertson, Iowa; Henry Schmidt, Jr., Ohio; Andrew Strange, N. Y.; Milton Rauch Trumbower, Ills.; George Gomez Van Mater, N. Y.; James Abram Walrath, N. Y.; George Lewis Warner, N. Y.; Robert Weir, Mass.; Albert C. Young, Utah.

The prizes awarded to the successful competitors in special departments of study were then announced, and conferred upon the winners, by Prof. E. Doremus, M. D., of the Faculty. The following list comprises the fortunate names.

Dr. George Lewis Warner obtained the gold medal of the Board of Trustees for the best general examination.

Dr. A. C. Young received the prize of the Alumni Association, consisting of a set of medical veterinary books, for the second best general examination.

The gold medal of the New York State Veterinary Society, offered for the best practical examination passed by the graduate of any of the veterinary institutions in the State, before a committee appointed by the Society, was secured by Dr. Andrew Strange, one of the graduating class of the evening.

Prof. Liautard's anatomical prize for the senior class was carried off by Dr. F. W. Hopkins; and that of the junior class by Mr. J. D. Fair.

A silver medal was given to Dr. M. R. Trumbower, by Prof. C. B. Michener, for the best paper read and defended before the college association.

The valedictory was handsomely delivered by Dr. R. C. Jones, of the graduating class, and was followed by the address to the students by Mr. F. S. Vanderveer, of the Board of Trustees.

The benediction, pronounced by Dr. Weston, closed the programme of the evening.

(From the *Breeders' Gazette*.)

INOCULATION FOR HOG CHOLERA A FAILURE.

M. Pasteur, the celebrated French physician whose investigations of the germ theory of disease, and whose cure for hydrophobia by inoculation have gained for him a world-wide reputation, some time ago turned his attention to the swine plague, which has played such havoc with the pork-producing interests of all countries, and after careful investigation discovered what he believed to be the germ of the disease, and was of the opinion

that by inoculation herds would receive perfect immunity from the ravages of the disease. Dr. Julius Gerth, formerly connected with the Bureau of Animal Industry and at present State Veterinarian of Nebraska, determined to thoroughly test Pasteur's method of prevention, and accordingly obtained directly from him attenuated or weakened virus, with full instructions for performing the operation of inoculation. The Agricultural College Farm, near Lincoln, was chosen as the place for performing the experiment, the results of which, as obtained from Prof. H. H. Wing, Superintendent of the farm, are as follows: On November 2, 1885, twenty-eight sound and healthy hogs were inoculated by Dr. Gerth with the attenuated virus, which operation was followed two weeks later by the second inoculation, according to the instructions of M. Pasteur. Symptoms of the disease soon developed, and a hog was immediately slaughtered and a post-mortem made, with the assistance of Prof. Charles E. Bessey, Dean of the Industrial College and Professor of Botany, who is an accomplished and experienced microscopist. With his powerful microscope Prof. Bessey was able to discover in the fluids of the body of the slaughtered hog germs which he positively identified as the same as the germs in the virus obtained from Pasteur, thus demonstrating that by vaccination the hogs had been given a light attack of the "hog cholera." What is yet more interesting is the fact that post-mortems made of a number of hogs that had died near Lincoln of the swine plague revealed the presence of the same germs in large quantities. Examinations of the vaccinated hogs were made from time to time as the disease progressed, and the germs from the fluids of the bodies of the slaughtered hogs and the hogs that had died of disease in other parts of the country were clearly identified by Prof. Bessey with the germs found in the virus sent by Pasteur. No hogs died from the effects of the virus, and when all had fully recovered, on January 20, five sick pigs were introduced among the twenty-two which remained, to determine whether the inoculated hogs would contract the disease. Of the twenty-two which according to M. Pasteur's theory should be thoroughly disease-proof, *fifteen have died* and the remaining seven are "convales-

cent.” It is needless to state that these tests and observations were made by Dr. Gerth and Profs. Bessey and Wing with the strictest scientific accuracy even in the smallest detail, and their unanimous decision is that M. Pasteur’s “inoculation theory” has been tried and found wanting by the cold logic of facts. Dr. Gerth is preparing an exact and detailed account of the experiment, which we presume will be given to the public at an early day.

PROPOSED LEGISLATION AT WASHINGTON.

FULL TEXT OF AN ACT TO AMEND AN ACT CREATING A BUREAU OF ANIMAL INDUSTRY, APPROVED MAY 29, 1884, INTRODUCED BY SENATOR BECK, OF KENTUCKY.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled :

SECTION 1. That in order to promote the exportation of live stock from the United States, and to protect and facilitate the commerce in cattle among the several States, and to remove the obstruction to inter-state and foreign commerce now occasioned by the existence of contagious diseases among domestic animals, the act establishing a Bureau of Animal Industry, approved May 29, 1884, be and the same is hereby amended as follows :

The Commissioner of Agriculture shall cause investigation to be made as to the existence of pleuro-pneumonia, foot-and-mouth disease, and rinderpest, or other exotic diseases, and is hereby authorized to enter premises for this purpose in any part of the United States where he may have reasons to suspect the existence of such disease or diseases. Upon the discovery of any of these diseases, the Commissioner of Agriculture, with the consent, approval, or co-operation of the Governor or other properly constituted authority of the State where such disease or diseases may be found, shall cause the appraisal of the animal or animals affected with, or that have been exposed to disease, and under the laws of the State provided for condemning private property for public use, shall cause the same to be destroyed and pay the

owner three-fourths of such amounts as the appraisers may determine to have been their value before being diseased or exposed, out of any moneys appropriated by Congress for that purpose; *provided*, That he shall not pay more than \$160 for any animal with pedigree recorded or recordable in the recognized herd books of the breed to which it may belong, nor more than \$60 for an animal not pedigreed; *provided further*, That in no case shall compensation be allowed for any animal slaughtered under the provisions of this act that may have contracted or have been exposed to such disease in a foreign country or on the high seas; nor shall compensation be allowed to the owner of an animal where by reasonable diligence he or his proper agents could have protected his animals from becoming exposed, nor to any owner who in person or by agent knowingly conceals the existence of disease in his herd. Any person refusing permission to an officer of the Department of Agriculture to make necessary examination of animals supposed to be diseased as mentioned in this act, or attempting to prevent such officer from entering upon the premises where such disease is supposed to exist, shall, upon conviction thereof, be deemed guilty of a misdemeanor, and shall be punished by a fine of not exceeding \$500 or by imprisonment for not exceeding 100 days, or both fine and imprisonment, at the discretion of the court, and any person who shall knowingly conceal the existence of such disease or diseases on his premises, or who shall fail to report their presence to the proper authorities, shall, upon conviction thereof, be deemed guilty of a misdemeanor and punishable by the same penalties as are provided for resisting the officers of the Department of Agriculture before mentioned in this act.

Where the owner of exposed animals or the person in charge thereof refuses to accept the award of the appraisers appointed to value by the provisions of this act, it shall be the duty of the Commissioner of Agriculture to institute rigid quarantine as provided by the act of May 29, 1884, creating the Bureau of Animal Industry.

The Commissioner of Agriculture may employ such number of persons to assist in the execution of this act as may be necessary

during the prevalence of outbreaks of the diseases herein mentioned.

Whenever any State or Territory shall fail or refuse to adopt and enforce proper measures of its own for the suppression of the diseases herein named, or shall refuse to co-operate with the Commissioner of Agriculture, as herein provided, it shall be the duty of the said Commissioner to certify the facts to the President of the United States, who after verification thereof is hereby authorized to issue his proclamation prohibiting the removal of cattle to or from that State or Territory, or to or from any part thereof.

SOCIETY MEETINGS.

ALUMNI ASSOCIATION OF THE A. V. C.

The regular meeting of the Alumni Association of the American Veterinary College was held in the lecture room of the college on Saturday, Feb. 27, President Dr. Hoskins in the chair.

Members present were Drs. Field, Coates, Hoskins, Critcherson, Johnson, Denslow, Bretherton, Pendry, Foote, Dixon, Krowl, Otto, Birdsall, Ruhl, and Michener.

Minutes of last meeting were read and on motion, adopted.

The question of admitting new members was then brought up.

The Secretary said he thought it had been held that all students graduating became members, and there was no necessary to elect. Considerable discussion followed; some holding opposite views, but a motion was finally passed, that the whole of the graduating class of '86 be invited to join without respect to dues, etc. A committee being appointed by the President to invite them, they proceeded to do so, and returned with Drs. Van Mater, Ashley, Bignell, Kuehne, Trumbower, Jones, Strange and Hopkins, who were addressed by the Chair as to the necessity of ever upholding the good name of their alma mater, etc.

The question of doing away with fees and dues of the Association was warmly discussed, some holding that the Association was an independant body, but which only admitted graduates of the college to membership. It was settled by Dr. McLean giving notice of amendments to by-laws and sections referring to fee and dues, doing away with same, etc.

Report of committee on prize was read by Dr. McLean and ordered received and adopted.

The following list of resident State Secretaries was, on motion, adopted: M. Bunker, Newton, Mass; L. G. Agersborg, Vermillion, Dak. T.; J. F. Autenreith, Jersey City, N. J.; W. H. Pendry, Brooklyn, N. Y.; E. M. Barnes, Kenosha, Wis.; F. W. Huntington, Woodford, Me.; W. H. Hoskins, Philadelphia, Pa.; E.

C. Ross, New Haven, Conn. ; R. F. Burleigh, Franklin, N. H. ; C. H. Peabody, Providence, R. I. ; C. W. Crowley, St. Louis, Mo. ; M. Cushing, Joliet, Ill. ; W. H. Martenet, Baltimore, Md. ; A. D. Galbraith, Greensburg, Ind. ; A. A. Holcombe, Fort Leavenworth, Ka. ; J. D. Hopkins, Chyenne, Wyo. T. ; A. J. Jeanin, Navarre, O. ; G. H. Keefer, Hillsdale, Mich. ; A. B. Morse, Des Moines, Iowa ; C. L. Moulton, Fort Reno, Ind. T. ; J. A. Myers, Linville, Va. ; A. C. Young, Salt Lake City, Utah T. ; W. H. Rose, Washington, D. C. ; W. B. Rowland, Wilmington, Del. ; J. W. Scheibler, Memphis, Tenn. ; J. J. Gerth, Lincoln, Neb. ; T. Outerbridge, Bermuda, W. I. ; H. T. Yokura, Tokio, Japan ; H. F. Laine, Havana, Cuba.

Dr. Dixon moved that the date of meeting be changed. Dr. McLean said he thought it was very necessary from the small number present, and named the third Wednesday in September. Dr. Coates thought the fixing of the date had better be left in the hands of the Executive Committee. Dr. Dixon suggested that the opening day of the college would be a good day, which seemed to meet the views of nearly all present. The matter was finally left in the hands of the Executive Committee.

Treasurer's report was read by Dr. Field, showing \$23 in hand, which was ordered received and adopted.

The election of officers was then proceeded with, and resulted as follows: President, Dr. Hoskins ; 1st Vice-President, Dr. Michener ; 2d Vice-President, Dr. Birdsall ; Treasurer, Dr. Field ; Secretary, Dr. Dimond ; Alumni Trustee, Dr. Miller.

On motion \$32.25 was ordered to be paid by the Treasurer, being \$20 for prize, Secretary's account etc. Meeting then adjourned.

In the evening about forty members, with representatives of the Trustees and Faculty, sat down to dinner at Clark's Hotel, spending about four hours eating much and drinking little, with a large amount of pleasing interchanges thrown in.

W. H. PENDRY, D.V.S., *Secretary*.

PEGASUS REDIVIVUS

A trip to Mount Helicon, a draught from Hippocrene, and a canter on the back of Pegasus—a steed who has thrown more ambitious jockeys than Barnum's trickiest of trick mules—is still among modern possibilities.

Ecce SIGNUM.

ANSWER TO THE TOAST "THE CLASS OF '86," AT THE DINNER OF THE ALUMNI ASSOCIATION OF THE A. V. C.

To Our Beloved Professors :

Then, here's to the Dean, the father of us all,
Professor A. F. Liautard ; may his glory ne'er grow small.
We shall ne'er forget his kindness, or the lessons he has given,
And I trust retain the many points that into our heads he's driven.
We shall ne'er forget his ringing voice, and fluency so free ;
But to find his *centres of ossification* ! this life is too
Short for me !!

And next is Professor Robertson, the same from day to day,
He's a model of *disposition*, I know the boys all say.
 His subject is *par excellence*, and he always makes it plain—
 May his life be long and happy, all sunshine and no rain;
 May his children thrive and prosper, and fill his heart with glee,
 But to make his *swell diagnosis*, this life is too
 Short for me!!

Then comes Professor Doremus, with a smile upon his face;
 He tackles my favorite subject, with the greatest ease and grace.
 His lectures are a treat to all, so simple and so plain,
 About batteries and spectroscopes, and the moon that has no rain.
 But when he strikes his S. Ox. and C. H.⁶ O.³ !
 To know what on earth he's talking about, this life is too
 Short for me.

And then Professor Pomeroy gives us knowledge on the eye;
 To find his equal here on earth, is foolishness to try.
 He is master of his subject, and he makes it clear and plain;
 I think if a man was blind as a bat, he'd make him see again.
 His brain is filled with wisdom, and his heart is open and free,
 But to learn his *thirteen coats of the retina*, this life is too
 Short for me.

Then next Professor Michener comes, to teach us how to cure;
 If we follow his good advice, our mortalities will be fewer.
 Of cattle pathology he is king—long may his voice be heard,
 And the walls of the good old green-room ring with each succeeding word.
 On obstetrics, he is in advance, I know you will agree;
 But to learn his *changes of the ovum*, this life is too
 Short for me.

Then, here's to Professor Coates, the students' firm, true friend,
 With always a smile and pleasant word, and helping hand to lend.
 On operative surgery and physical diagnosis,
 Then canine pathology and histology of the horses.
 On physiology he takes the cake—gave sixteen lectures in three;
 And his *nervous system of the tape-worm* opened a new chapter
 In life for me.

And now Professor Dixon, with perspiration on his brow,
 Has labored hard and patiently, to try and teach us how
 Each muscle and each ligament has attachments to each bone,
 And we thank him very kindly for the interest he has shown.
 And alike to Professor Steurer, a large share of our thanks are due;
 But to listen longer, I am afraid you'll think, this life is too
 Short for you.

BY DR. D. C. ASHLEY, Class 1886.

NEW YORK STATE VETERINARY SOCIETY.

The annual meeting of the New York State Veterinary Society was held at the Ashland House, New York, on Tuesday, March 9. President R. A. McLean in the chair.

Members present were: Jos. L. Robertson, M.D., V.S., R. W. Finlay, D.V.S., L. McLean, M.R.C.V.S., D. J. Dixon, D.V.S., I. Denslow, D.V.S., R. A. Finlay, D.V.S., S. S. Field, D.V.S., H. F. Foote, M.D., D.V.S., W. H. Pendry, D.V.S., J. S. Cattanach, V.S., J. Faust, V.S., J. Stokes, V.S., R. Ogle, V.S., C. C. Cattanach, D.V.S., T. Ogle, V.S., W. E. Cuff, D.V.S., T. Birdsall, D.V.S., W. C. Bretherton, D.V.S., W. Carmody, M.R.C.V.S., W. H. Boyd, D.V.S., J. F. Mustoe, D.V.S. and G. P. Delessier, V.S.

Minutes of last meeting read and adopted.

Committee on Legislation reported that the bill introduced in the Assembly had been read twice, referred to the Committee on Public Health, reported favorably by them, and referred to the committee of the whole, and that it was expected in a few days that it would be ordered to a third reading, and pass the Assembly. The expenses of said committee, up to the time of reporting, had been, printing, \$20.00; expenses of chairman to Albany, \$15.00 and postage of circulars, \$3.75; total, \$38.75. On motion the report was received and adopted.

Secretary read the following report of the Prize Committee.

BROOKLYN, February 26, 1886.

Dr. Pendry, Secretary New York State Veterinary Society:

DEAR SIR.—We, the undersigned majority of the committee on the practical examination for the prize offered by the New York State Veterinary Society, would most respectfully report that the examination was held at the Hospital of Dr. Berns, 74 Adams Street, Brooklyn, on February 26, at 2 p.m. Drs. Field and Berns being present, Dr. Finlay absent. Six cases were submitted for examination, for diagnosis, prognosis and treatment to the gentlemen present. The cases consisted of purpura, hemorrhagica, osteo porosis, pneumonia of the right lung, navicular arthritis, pharyngitis, glanders and one practical question in relation to the arrest of hemorrhage of the palatine artery; and all candidates were required to examine all patients, separately or in pairs, and give a written opinion of each case. After a careful examination of the opinions submitted, we find that Dr. Andrew Strange has passed the best examination, and he is in our opinion entitled to the prize offered by our society. We would also beg to most favorably mention Drs. Walrath and Doyle.

Yours very respectfully,

S. S. FIELD, D.V.S., Chairman.

GEO. H. BERNs, D.V.S.

The Secretary proceeded to read also a letter attached to the report, but was stopped by the Chair, on the grounds that it was not a report. It was stated that it was a copy of a letter which had been sent to the Dean of the college which was interested by the decision of the committee.

Dr. L. McLean raised the question of the power of the Secretary to report to the Dean of any college; he considered he had exceeded his duty.

Dr. R. W. Finlay asked how the letter attached referred to the report.

Dr. L. McLean said the question was, whether the report be received.

Dr. C. C. Cattanach moved, seconded by Dr. Dixon, that the report be received.

Dr. L. McLean moved in amendment, that the report be not received. There being no seconder to this, it was ruled out. The question being called for, the motion was put and carried.

Dr. Field, chairman of the Prize Committee, said the committee had been notified of their appointment by the Secretary, and that only one college had accepted the invitation to compete for the prize. According to the Secretary's letter of July 12, he had therefore arranged to have the examination held at a date to suit the parties interested, which was fixed for February 26, and under date of the 16th, he so notified the Secretary. After all this had been done, he received through the Secretary, a letter dated the 17th of February, from Dr. L. McLean, as Secretary of the New York College, stating that there would be graduates from that school and that they would be ready about March 17, and asking what date the examination would be held. He replied, giving the date arranged. He moved, seconded by Dr. Birdsall, that the committee be discharged.

Dr. L. McLean moved as an amendment, seconded by Dr. R. W. Finlay, that the committee be not discharged until he had been heard. This being carried, he stated that he was the originator of the gold medal given by the Society. He had expected manliness and fair play; it was all he asked for. On February 17, he had notified the Chairman of the Examining Committee, through the Secretary, that there would be at least six members of the New York College to compete for the prize, and asked for the date of the examination. He stated that the students would be graduated about March 20. He had received a reply stating that the examination would be held on February 20, and that the prize was only open to graduates. Surely the New York College could not be expected to close its session three weeks before its time, neither would it be expected the American Veterinary College would lengthen its session for that length of time. He contended that the medal had been gobbled up, three weeks before the students of the New York College were ready to compete. He could not say whether or not the students of the American Veterinary College were afraid to meet those of the New York.

Dr. R. W. Finlay said he did not know what had been the rule regarding the medal. If it was open to the three colleges, it would hardly appear that the New York College had had fair play.

Dr. Birdsall considered that only one mistake had been made, and that was, in not allowing students instead of graduates to compete, subject to graduating.

Dr. R. A. McLean said he was present at the examination, and had formally objected to the committee proceeding to award the prize.

Dr. R. W. Finlay had no desire to reprimand the Prize Committee. If the usual rule had been followed, they should be discharged.

Dr. J. S. Cattanaach said he agreed with Dr. L. McLean, that both colleges should have had a day set apart for the examination.

Secretary Pendry stated that perhaps he could throw some light on the subject. On January 23d he had notified the three colleges, Cornell, New York and the American, that the Society would give a prize of a gold medal for the best practical examination passed by any graduating student of 1886, of these colleges, and asking to be informed at once whether or not they would send any, and about what time they would be ready, repeating precisely what had been

one last year. On January 28th he received a reply from the American, stating that they would have competitors for the medal, who would be ready any time after February 24th. He had then waited till February 12th, without receiving any further replies to his notices, and had concluded—rightly or wrongly, it was for the meeting to say—that the two remaining colleges would give his letters the same treatment that they did last year—the one not answering, the other declining to send any one to compete—and after waiting three weeks, notified the chairman that only the American had responded, to which he got a reply, saying, the examination had been fixed for February 26th. This was under date of February 16th; and under date of February 17th, he received a letter from Dr. L. McLean, as stated by that gentleman, which he had forwarded to Dr. Field. As to the letter attached to the report, it was a copy of a letter addressed to the Dean of the college interested by the decision of the Prize Committee, and was simply as follows: “As the decision of the Prize Committee affects your college, I take pleasure in forwarding you a copy of their report.” He did not consider he had exceeded his duties; he had followed the usual plan, and not attempted to form new rules.

Dr. R. W. Finlay said, after the explanation from the Secretary, it would not appear that any new rules had been laid down, and thought they would have to discharge the committee.

Dr. L. McLean protested. His letter was dated February 17th, and arrangements had only been made on the 16th, and could not have taken root deeply.

The motion to discharge the committee with thanks, was carried, as was also one to the effect that Dr. L. McLean's protest be entered on the minutes.

The Secretary's report was then read, showing sixty-one members in good standing. On motion, it was received and adopted.

Treasurer's report was also read, showing there was due him \$38.62. The report, on motion, was ordered received and adopted.

The election of officers being next in order, and a motion being carried, that the Chair appoint a Nominating Committee, the following gentlemen were so named: Drs Dixon, L. McLean and J. S. Cattanach. They reported as follows: For President, R. W. Finlay, D.V.S., and S. S. Field, D.V.S.; First Vice-President, S. K. Johnson, D.V.S., and Geo. H. Berus, D.V.S.; Second Vice-President, C. C. Cattanach, D.V.S., and G. Delessier, V.S.; Secretary and Treasurer, W. E. Cuff, D.V.S., and W. H. Pendry, D.V.S. Board of Censors, R. A. McLean, D.V.S., W. Carmody, M.R.C.V.S., R. Ogle, V.S., J. Faust, V.S., R. A. Finlay, D.V.S., W. J. Coates, M.D., D.V.S., T. Birdsall, D.V.S., J. S. Cattanach, V.S., W. C. Bretherton, D.V.S., and E. Waters, V.S.

On motion, report was received, and balloting ordered to be proceeded with, which resulted as follows: President, R. W. Finlay, D.V.S.; First Vice-President, S. K. Johnson, D.V.S.; Second Vice-President, C. C. Cattanach, D.V.S.; Secretary and Treasurer, W. H. Pendry, D.V.S. Board of Censors, R. A. McLean, D.V.S., Chairman; W. Carmody, M.R.C.V.S., W. J. Coates, M.D., D.V.S., R. A. Finlay, D.V.S., and R. Ogle, V.S.

The newly elected President having been conducted to the chair, was welcomed by the retiring President, with the hope that he would find an easier seat than he had. Dr. Finlay returned thanks for the honor conferred, and promised with the aid of the members to try and make the meetings interesting.

The question of a general meeting place was brought up, and on motion, Drs. R. A. McLean, Delessier and R. A. Finlay were appointed to find such a place, its cost, and report at next meeting.

The Treasurer reminded the meeting that there was an indebtedness of \$65.00 to start the year with, for printing account due, and balance due account.

The Chair instructed the Committee to bear this in mind.

On motion, meeting adjourned till second Tuesday in April, to meet at the same place, and Dr. C. C. Cattinach was appointed as essayist.

W. H. PENDRY, D.V.S., *Secretary*.

DEFECTS OF THE PRESENT U. S. ARMY VETERINARY SERVICE.

The aggregate pecuniary value of army animals is nearly three million dollars.

Two-thirds of those animals, value two million dollars, are utterly unprovided with veterinary attendance or supervision, but are left to the ignorant and often brutal treatment of soldiers and drivers, resulting in large annual loss of public property.

Large losses annually occur, and great waste of veterinary drugs, instruments, etc., there being no veterinary specialist in charge of these, their feeding, shoeing, purchasing and general management being regulated by "Boards" composed of officers who have not the necessary technical knowledge or education to fit them for such positions.

U. S. Army officers, unlike their European confreres, do not receive the slightest instruction on veterinary matters, although they are frequently in charge of large numbers of public animals, and have the regulation of veterinary affairs, purchase of horses and mules, frame rules for feeding, watering, shoeing, medicines, veterinary attendance, etc.

Army horseshoeing "according to tactics," is "foot butchery, hoof mutilation, and destruction;" it prematurely cripples and renders useless hundreds of valuable horses and mules each year.

The annual animal condemned and death list presents a far higher percentage than any other civilized army, requiring a yearly appropriation of two hundred thousand dollars.

Animals fit for military purposes are becoming scarcer, of greater pecuniary value, and more difficult to procure from year to year.

Large numbers of animals anatomically unsound, physically unfit from bad conformation, etc. etc., are annually purchased, from want of professional veterinary examination previous to being bought.

The present position of the army veterinarians, their low relative rank, poor pay, utter want of prospects, promotion or pension for long services, injuries or wounds, to which their professional duties render them so liable, is such as to deter respectable, efficient or talented professional men from entering, or, having entered, remaining in the service.

The Board of 1879 decided that all "army veterinarians must be graduates of reputable colleges or schools," nevertheless, four of the best appointments are at present in the hands of quacks and empirics, including the position of "Inspector of Cavalry Horses for the Division of the Missouri," the latter resulting in the purchase of anatomically unsound and physically unfit animals in large numbers.

On the arrival at their post of ninety remount horses, purchased in 1885, a casual professional examination revealed seventeen of them affected with various chronic diseases, which not only rendered them worthless for military purposes, but reduced their pecuniary value at least seventy-five per cent. below what they cost the Government.

Appointments as army veterinarians are in the hands of regimental commanders. From individual idiosyncracies, difficulty of retaining veterinarians, etc., cavalry regiments, composed of animals to the value one hundred and fifty thousand dollars, are frequently for long periods without professional assistance, often resulting in serious losses of public animals; as instanced in the First Cavalry in 1876, where an outbreak of "glanders," after two years duration, on the appointment of a veterinarian, was shown in its true light, and suppressed only by the destruction of horses and property, value fifty thousand dollars, and several human lives were sacrificed.

The Act of Congress specifically states "that each cavalry regiment shall have one veterinary surgeon," nevertheless, many regiments are frequently, for long periods, not so provided, notably instanced in the Fourth Cavalry, where, owing to personal

whims, this regiment has been without the services of a veterinarian for some years, this negligence daily jeopardizing and endangering large amounts of public property.

The Board of 1879 recommended as a measure of economy that a veterinarian be stationed in each large garrison.

Veterinary education comprises a three years' curriculum, an expenditure of about three thousand dollars, and more subjects are as minutely studied as in human medicine, viz: mineralogy, botany, physics, chemistry, analysis of food and water, physiology, histology, pathological anatomy, general pathology, (human, equine, ovine, bovine, canine and feline,) medicines, therapeutics, soundness of animals, dietetics, buying and selling, transportation, horse-shoeing, clinics, obstetrics, surgery, forensic medicine, veterinary police and contagious diseases, meat inspection, animal conformation, operative practice, microscopy, sanitation, stabling, examination of forage, grain, water, etc., hygiene, skin diseases, ophthalmology, helminthology, jurisprudence, etc., etc.

The army veterinarian is paid less than the telegraph operator, ordnance sergeant, wagon boss, mulepacker, post blacksmith and carpenter, Q. M. clerk, etc., etc.; he has only the rank, quarters, and social status of the enlisted man, consequently his professional suggestions and instructions are neither received nor executed with the respect and promptness they deserve.

In all other branches of Government veterinary service, (the Bureau of Agriculture, and various State veterinary officials,) the veterinarian is recognized, treated, and respected as a professional representative, and a gentleman, with stipend from two thousand dollars to five thousand dollars per annum.

The army veterinarian's pay is not sufficient to supply more than the bare necessities of life, as army living is high and expensive. In travelling he is only allowed the same amount of baggage as an enlisted man, and consequently must dispose of his effects when leaving, and purchase others at the next station. His travel pay stops on his arrival at his destination, although he is frequently compelled to remain at hotels, etc., for long periods, through scarcity of quarters.

The Quartermaster General in his annual report of 1884-5, states "that veterinarians are practically without quarters."

As a professional representative he cannot associate with the enlisted men, if he wishes to command the respect necessary to the proper performance of his duties. His present status and pay debars him from the society of officers and their families.

In all European armies, including those of England, France, Germany, Russia, Egypt, Italy, Sweden, etc., etc., the veterinarian is a commissioned officer, ranking from lieutenant to colonel; some of those countries are so particular in this respect, (France and Germany) *that they graduate and educate their own veterinary cadets, and in all of them, their veterinary services are organized into special corps and departments.*

The British War Department control thirteen thousand six hundred animals, and employ about *two hundred* of the most scientific and talented veterinarians, ranking as commissioned officers from lieutenant to colonel. The U. S. War Department control over fifteen thousand animals, and employ *but fourteen veterinarians*, ranking as *enlisted men*, hence none but the very refuse of the veterinary profession will remain in the army under the present humiliating conditions, resulting in great loss of public property and detriment to the military service.

Troop horse-shoers and farriers are detailed to these duties without the slightest intelligent instructions, but are left to their own ignorant, injurious, and often cruel devices, resulting in ruining, crippling and poisoning public animals, large numbers being permanently and prematurely rendered useless, and sold as unservicable and unfit for further service, from the above easily preventible causes.

The establishment of a veterinary hospital, pharmacy and shoeing shop in each post, under the special control and supervision of a veterinarian, would cause immense saving, preventing the present exhibition of enormous and poisonous doses of drugs by ignorant farriers, the ruinous foot butchery and hoof mutilation now carried out by horse-shoers, and for the isolation of sick animals; the latter are now retained in their usual stalls in the midst of their companions, hence the frequency of outbreaks of contagious diseases amongst army animals.

Approaching service in cities, and neighborhood of the centres

of contagious diseases, together with the removal of military animals from soft prairies to hard roads and pavements, renders the establishment of an army veterinary department, and inducements for talented veterinarians to enter and remain in the service, an urgent necessity, and a measure of economy. The present disgraceful state of army veterinary matters savors largely of apathy, and negligence of the best interests, and detriment to the various branches of the service.

The formation of an army veterinary corps, with its commissioned officers, as in all European countries, would result in great economy, and benefit to the best interests of the service, by reducing the present high mortality, and yearly animal condemned list, arising from causes not enquired into, the purchase of sound and proper animals, prevent the present waste of drugs and other veterinary materials, providing rational instructions for veterinary nurses and horse-shoers. At present, certain stables, posts, regiments, batteries, and garrisons may have an unusually high death rate, or percentage of sick or diseased animals, and continue so, without the slightest attention or inquiries as to their causes, or measures being undertaken for their removal, prevention or re-appearance.

CORRESPONDENCE.

VETERINARY EDUCATION.

DAYTON, O., February 20, 1886.

Editor American Veterinary Review :

DEAR SIR.—Dr. Pendry in his very able letter to the *REVIEW* on Veterinary Education, asks a question he and others have a right to ask.

What has been done by the committee appointed by the United States Veterinary Medical Association, in September, 1884?

I with two others was appointed on the committee. Soon after I wrote to the principal of the Ontario Veterinary College, (I being the only Ontario man in that committee). The answer I

received was not favorable to any action, with reasons which it is unnecessary to mention. I have communicated the result of my actions to Dr. Michener, stating the case to him. I know no more what has been done and had I not been ill I should have attended the last meeting of the United States Veterinary Medical Association, and reported as to my unsucccess.

W. R. HOWE, V.S.

CORRECTION.

MEADVILLE, March 13, 1886.

Dr. A. Liautard :

DEAR SIR.—A typographical error occurs in my article in March number of the REVIEW, on page 509. I am made to say that I gave x. gills tinct. aconite with hypodermic syringe, and the same sentence is then repeated. The printer has taken the abbreviation "gtts. drops" for gills; please correct that statement by notice in April number.

Yours, &c.,

C. C. McLEAN.

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AMERICAN VETERINARY REVIEW.

EDITED AND PUBLISHED BY

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OF. R. S. HUIDEKOPER, M.D., V.S., D. J. DIXON, D.V.S., Hoboken,

AND OTHER VETERINARIANS.

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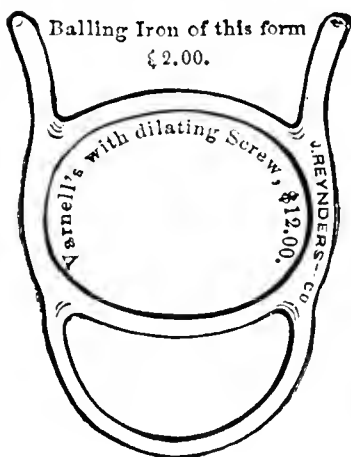
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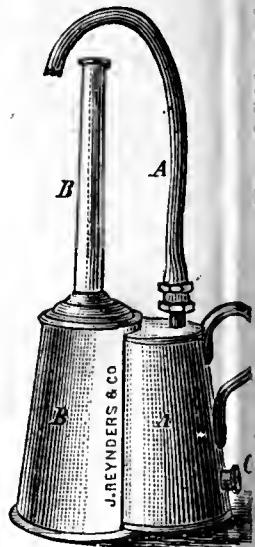
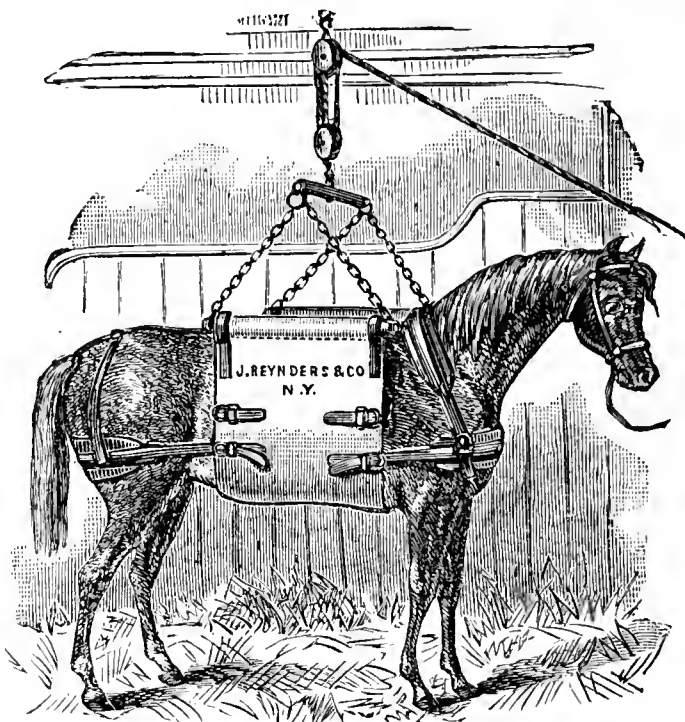
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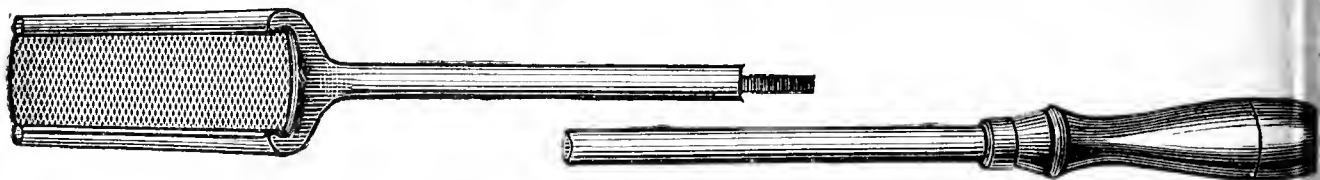
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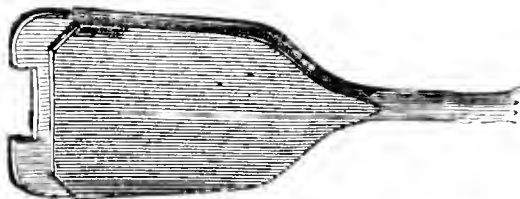
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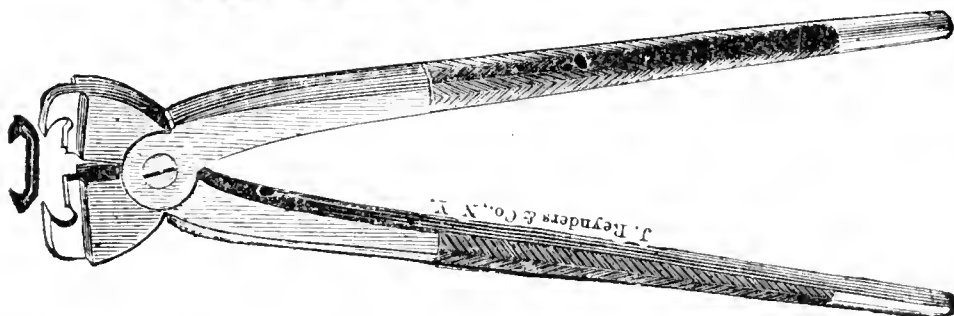
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AMERICAN VETERINARY REVIEW,

MAY, 1886.

EDITORIAL.

HENRY BOULEY—his death mourned by the entire veterinary world—a monument to be erected to his memory—every veterinarian and every veterinary society invited to subscribe—the American list open and started. PRIZE OF THE REVIEW—its requirements—only four months left to the competitor—why it was read—the apathy of the veterinarians—the danger that threatened our elevation in it. TUBERCULOSIS IN THE UNITED STATES—the interest in contagious hog-pneumonia not as great as it was—tuberculosis takes the lead—its presence amongst our costly herd of registered Jerseys—now for legislation. HOG-CHOLERA—wanted, a vaccine that can be used—is it the same disease as that of sheep—difference of opinion, still similarity of symptoms and of lesions. RESULTS—wonderful results obtained in human prophylaxy—application of vaccination in the diagnosis of suspected animals—its great and essential use to the veterinarian—anxiety, life and money saved by it. GEORGE FLEMING—his election to honorary membership in an American veterinary society.

HENRY BOULEY.—There is a unanimity and an agreement in the comments of the veterinary press, touching the loss which the community and the profession have suffered in the death of our departed confrere, which is equally honorable to the writers and just to the memory and the merit of the illustrious deceased. The regret expressed, and the appreciation of his eminent qualifications and brilliant public services, recorded by all who have referred to the subject, are universal, and are lacking in no element of earnestness and sincerity. As an evidence of this widespread and honorable feeling, we again bring to the notice of our readers the movement now in progress having in view the erection of a suitable monumental memorial, by the veterinarians

of France, in conjunction with those of Europe at large and the United States as well, and to which every true veterinarian, wherever residing, will, no doubt, consider it a pleasure, if not a duty, to contribute. We have not failed to add our voice to the verdict which has been so harmoniously rendered upon the character and achievements of our beloved friend, and which assigns to him the distinction of holding the chief place in the foremost rank of the profession, and we consider it an honor to be able to render such aid as we may in forwarding so commendable a project. This we propose to do by co-operating with the French committee having in charge the application of the amounts collected for the construction of the monument, and it will give us great pleasure to be made the agents of our professional friends in this country, in forwarding their subscriptions to the committee in Paris. We have already a small amount in our hands, devoted to the object in view—some twenty dollars—and we hope no delay will occur in making up a sum which will be honorable to our national reputation for liberality and promptness in a good work.

The authors of the project have shown excellent judgment in the selection of a site for the contemplated memorial, by fixing upon the grounds at Alfort for its erection. It is the scene of his noblest achievements, and the spot where he first manifested and developed the greatness of his genius and established his claim to be enrolled as the first among the veterinarians of his time. No fitter place could be devised at which to plant the "counterfeit presentment" of one who was for so long a time a living inspiration and power, on the very spot where he was, while alive, the presiding and directing genius.

The "REVIEW PRIZE."—At the last September (1885) meeting of the United States Medical Veterinary Association, by way of giving an evidence of our desire to aid in giving an impulse and adding to the inducements to study and investigation in the ranks of our profession, we tendered the offer of an annual prize additional, and of similar value to that already provided by the Association. Our offer was for the best original paper on any subject within the scope of inquiry in veterinary science or prac-

ice, and the conditions attached to the offer are such that every competitor is sure to obtain at least the fullest publicity and whatever degree of resulting credit his work may merit. We have already stated these terms, but for the benefit of new readers and any others who may become interested, we repeat them here. The papers presented for competition are to be published in the REVIEW, and the prize is to be awarded by a vote of the United States Veterinary Medical Association, at the coming September meeting, the vote being taken upon the papers alone, without any knowledge of the authorship. The papers are to be without signature, but must be distinguished by a motto, and the name of each author must be enclosed in an envelope, which must bear on the outside the same motto by which his composition is to be identified.

The brief period of four months only now remains until the meeting at which this matter is to be determined, and—shall we say it—the first competitive paper has not yet come into our hands!

We scarcely care to refer to the pecuniary value of this prize which no one, so far, seems to covet, though even this might sometimes justify a few hours of thought and labor, but when we refer to other and nobler considerations, and the motives of a commendable ambition which no one seems to possess, what can be said? If the veterinary profession in America is to carry with it the prestige which properly belongs to it; if its members are to be men who can maintain a social equality with those who practice callings in no sense more respectable; if American veterinarians are unwilling to merit the stigma of inferiority, and to feel themselves incapable of fraternizing upon equal terms with the members of the same profession in European countries; if American science in this line of study is not to be *nil* as an originator, but is to borrow or beg all its advancement and growth from abroad—then, the more's the pity, let us sit humbly down and work our way with the minimum of knowledge, modestly plying the trade of doctoring horses and cows, for a moderate living, and leaving it to other lands to boast of their Bouleys, their Pasteurs, their Flemings, and scores of that type of veterinarians. But

if pessimistic suggestions like these are to be accounted slanderous, absurd and unpatriotic, let us see the evidence. Let the embarrassment of the members of the Association, in voting on the papers not yet received, be founded on the fact that there is such a thoroughness of research, such a patience in the comparison of obscure phenomena, such acuteness of perception in detecting hidden niceties of lesion, such sagacities of diagnosis, and such infallibility of prognosis, in *all* the essays, not yet written, that every one shall be better than all the rest, and nothing less than a medal for each can satisfy the demands of impartial justice. Let this be so, and we will answer for all the medals thus earned.

Nous verrons—perhaps.

TUBERCULOSIS IN THE UNITED STATES.—The subject of contagious pleuro-pneumonia seems, at the present time, to have lost much of the interest with which, in former years, it was regarded. Probably the variety of the means and the vigor of the measures employed to oppose the ravages, and the prompt resort to the stamping out process on the appearance of any new outbreaks, with the fact that it seems to have proved itself to be quite amenable to the stringent and successful methods adopted by the State authorities and their official veterinarians—probably all these causes combined have had the effect of measurably removing the subject from public attention, and allaying the excitement and alarm formerly so prevalent. Another reason may probably be found in the existence of another bovine scourge, which appears to be prevailing throughout nearly every section of the country, and which, affecting as it mostly does, the more costly and valuable grades of animals, is likely to be attended with a more serious pecuniary loss than some of the other epidemic and infectious diseases have inflicted. We refer to tuberculosis, numerous invasions of which disease have recently been brought to public notice. Maine, Massachusetts, New York and New Jersey, besides other regions, are reported as having herds of tuberculous animals, amongst which are many of high value, including bulls and cows of the Jersey families. This is a disease which well merits the attention of the veterinary sanitarian, and when we

Consider the recent discussions and discoveries of its contagious powers, and recall the similarity existing between this and the same disease in man, the human sanitarian also will once again be obliged to acknowledge the importance of the link which unites the two medicines. More dangerous in itself probably, than contagious pleuro-pneumonia, it may also be found more difficult to suppress, and having so interesting a relation to the general health of the people, it demands more active and effective legislative action to keep it under control.

HOG CHOLERA.—If other diseases of our domestic animals are claiming the consideration of sanitarians and legislators for economic reasons on account of the losses they may inflict on the national wealth, as well as their disastrous effects upon the general health of the nation, what must be said of hog cholera, a disease which, it is acknowledged, costs the country hundreds of millions of dollars yearly? Our agricultural papers are full of descriptions and advice on the subject, including both the prophylaxis and the cure, but the value of the suggestions so variously given, especially those of the preventive class, becomes but little apparent, or quite falls to the ground when it is considered that *has been thoroughly and without doubt*, demonstrated that inoculation is the *only* reliable measure of prevention. It is true that before inoculation can be introduced into this country, we must have a definite and satisfactory answer to an important question furnished, from one source or another, and must settle the query, "what is hog cholera"—is it the same disease here as that which prevails in Europe? Veterinary authorities on this side of the Atlantic seem to disagree on this serious point. The rouget of France, the schweine-senche of Germany, and the pneumo-enteritis of England, and the cholera of America one disease? If we are to accept what has been written by competent authors in all these various countries, there does not seem to be room for a doubt. The symptoms and the lesions of which we read descriptions by French, German, English and American authors, are almost literally the same. The reports of those who have seen it in these various countries contain no essential differences in their accounts of the different nationalities and of different breeds. Not-

withstanding this, however, statements of the opposite opinion have been made public, in a number of instances, as of course there will always be many minds among many men. We, who have seen it both in France and America, and some of our friends who have observed it in Germany and in the United States also, are in no doubt respecting their similarity, and are so strong in our consideration, that we cannot see any other way to recommend in the prophylaxy of this scourge of swine, than inoculation.

With this object in view, we would urgently recommend to those who may have facilities for working in that direction, to endeavor to find a true vaccine, which, if not Pasteur's, may at least satisfy us with the same results.

RABIES.—Of this disease, we have little to say that has not already appeared in print, in most of the medical and veterinary journals. In the results already secured by M. Pasteur, the new method has shown undeniable evidences of its superiority. Out of 385 persons bitten by mad dogs up to the first of March, who were subjected to the treatment, one only had died with hydrophobia. It was a case in which the patient had received numerous and deep wounds, only thirty-seven days previous to the first inoculation. Over 200 of the patients had been bitten more than two months previously, or beyond the ordinary limit of the incubation of the disease. If then, it is shown by the most attainable statistics, that the average death rate in man is one in six of those bitten, we become able to appreciate the number of persons saved from one of the most horrible deaths that can be imagined. As Pasteur, says, "The prophylaxy of rabies is found."* Granted as the result is, it probably does not interest the veterinarian as a veterinarian, as much as the other appreciation of which it is susceptible in our practice. The manipulations and the various methods of proceedings followed by M. Pasteur, while seeking for the virus, have brought to the attention of the practitioners an important fact, by disclosing the simple means which are now at the disposal of determining, in the case of an animal which had been killed after he has bitten other animals or persons, whether he was

* Since this was written, intelligence has been received that two other persons have died from the disease, though submitted to the treatment. These were counted in the number up to the 1st of March.

morning under the disease when he inflicted the wounds. This is certainly a point of great importance and significance. It signifies the prevention of untold suffering from harrowing suspense and anxiety, and in not a few cases, the preservation of life itself, from the shock of mortal fear. It means, moreover, the saving of money, and the risk and inconvenience of preventive medication.

Now that it is well known that the inoculation of the smallest particle of brain, or of the medulla oblongata, into the cranial cavity of another dog shortens the period of incubation to a few days only, it becomes the duty of the veterinarian to familiarize himself with this method of investigation, with a view to the public benefit and satisfaction from its knowledge. He can no longer satisfy himself with theories of vague lesions; of foreign substances in the stomach; of a concentrated bladder; or even of a congested pharynx, or a more or less correct lay history of a case. Inoculation is the only positive means by which he can decide whether the prophylaxy of Pasteur ought or ought not to be applied, or whether the persons bitten are or are not in danger.

FLEMING'S HONORARY MEMBERSHIP OF THE NEW JERSEY STATE VETERINARY SOCIETY.—It is surprising that the veterinary profession of America should have waited so long to do for Mr. G. Fleming that which the New Jersey State Veterinary Society did at an unanimous vote at their last meeting. In electing him to honorary membership, the Society may claim to be the first on this side of the water to express towards our esteemed friend their appreciation of his work in behalf of our profession. In making this the first incident of the kind, we believe that we are correct, although his name may be found on the roll of the United States Veterinary Medical Association, associated with that of our great departed Henry Bouley. We do not know that he ever received notice of his election, which occurred years ago; indeed, we are quite sure he never received it, for there is no record of his acknowledging the compliment—an omission of courtesy of which he would never have been guilty. The letter in which Mr. Lowe presented his name to the Faculty will be found on another page.

ORIGINAL ARTICLES.

DISEASES OF THE HEART IN DOMESTIC ANIMALS,
ESPECIALLY THE HORSE.

BY FR. BLAZEKOVIC.

(Translated by J. C. Meyer, Sr., V.S.)

Continued from page 5.

(C) INFLAMMATION OF THE INNER LINING OF THE HEART.

Endocarditis.—By the term endocarditis, an inflammation of the inner lining of the heart is understood. However, it must be taken into consideration that the endocardium has no vessels, hence an inflammation is possible, not of the endocardium itself, but of its directly underlying tissue only, which is supplied with vessels. Probably in consequence of insufficient attention, endocarditis among domestic animals has as yet very rarely been an object of diagnosis. In horses it is found complicated with other diseases, as inflammation of the lungs and pleurisy; but especially in acute constitutional diseases, as influenza, subacute anthrax and typhus, it is often found with astonishing exactness and precision of the symptoms. Endocarditis is artificially generated by large doses of digitalis. Dogs are prone to it.

At the outset endocarditis is characterized by a sudden weariness and dejection, violent inflammatory fever, with slight remission, high temperature, 38° to 40° C., a small, conspicuously quickened pulse, which may reach 90 to 120 beats, and does not correspond with the heart-beat. (Very often in constitutional diseases, anthrax, influenza, etc.) At the beginning the heart-beat is strong and vehement, and is distributed over a large space of the region of the heart. In increased effusion the valves of the heart become morbidly changed, and thereby are disturbed in their function; the pulse now gradually becomes smaller, intermittent, leaping, and upon approaching death it sometimes becomes tremulous in regular intervals. If a purulent exudation be the sequel of endocarditis, the last described condition is constant.

During the first half of the disease, respiration is normal, but as the disease progresses the respiration becomes interrupted, short, accelerated, and toward the end of life it increases to excessive dyspnoea and danger of asphyxia, owing to haemostasia.

The physical signs are increased action of the heart and violent heart-beats, by which the walls of the chest are agitated. If pericarditis be present with exudation at the same time in the pericardium, a peculiar vibration is communicated to the hand. Percussion shows alterations only when the form and contents of the heart begin to change, owing to the setting in of the exudation. The greatness of the altered form also corresponds to the tension of the dullness.

It is also important to determine the cardiac sounds. At first partly louder or duller, apparently normal, these change during the course of disease according as the valves are irritated by the degree of inflammation and its products. The systolic murmurs are always stronger than those of the diastole, often a metallic sound is present, resulting from increased impulse of the heart. If the inflammation be concentrated to such places where a stronger current of blood circulates, the double murmur is perceptible, which in human medicine is regarded as characteristic of endocarditis. At places less exposed to the current of blood the sounds are weak or wanting altogether. Later we shall speak of those murmurs which are produced by changes of the valves.

A constant symptom in endocarditis is haemostasis in the orifices of the veins, in consequence of which secondary hyperaemic and disturbed nutrition in the liver, spleen, kidney, mucous membrane, etc. Infiltration of the extremities, with indications of dropsy, are prone to set in, in cases which have become chronic. Secondary processes of cyanotic redness, hemorrhages and thrombosis, are nearly always characteristic symptoms of endocarditis, which appear very readily in typhus and influenza.

Such affections as originate either as natural defects of formation, or as a result of pre-existing and still existing diseases of the heart, and gradually develop into a lingering and chronic disease, are enumerated under a third species of diseases of the heart. The continuance of these diseases is under

moderate, gentle, normal circumstances, not absolutely dangerous to the life of the animal; but upon the slightest provocation such conditions may become eminently threatening to the organism.

(a) Hypertrophy and expansion of the heart is, as the post mortem examinations reveal, not unusual and often attains an astonishing size. The nature of the hypertrophy is scarcely ascertainable during life, though its presence can be proved with certainty. In all cases hypertrophy has as a result, difficulty breathing, but when affected in a high degree, it may upon the slightest exertion increase to threatening asphyxia. It is one of those conditions which in the older literature was designated "herzschlächtheit," and we know by the name "emphysema."

In the state of repose the pulsation is not very important; in moderate hypertrophy a stronger impulse is present. Generally emphysema of the lungs is developed at the same time. The number of such emphysematous horses is enormous, and met with especially in cities, among horses belonging to the poorer class who are obliged to own vehicles to get a livelihood. When hypertrophy is developed the impulse becomes changed, the beats less dragging, as though an obstacle were present which has a checking effect upon the action of the heart. The heart's action is laborious, often indicated merely by an indefinite heaving, trembling and whirring; it can scarcely overcome its mass, as were.

In momentary increased activity of the heart the movements are only weak and powerless. The pulse corresponds perfectly with this condition; with the number of beats it falls most below the normal, with longer intervals, is scarcely perceptible, weak and powerless. If defects of the heart are also present the pulse is often intermittent, or so indistinct that several pulsations are united into one. Generally a prominence of the jugular vein is noticeable; and in more violent action, even a pulsation of the same.

Percussion always gives an extended dullness of the region of the heart, which is particularly evident in dogs. On auscultation, at the outset normal, short, clearer sounds are heard as long as the dilatation of the ventricles is moderate, provided neither

ostium nor valves are drawn into sympathy at the same time. As the expansion of the ventricle increases, its systole becomes very imperfect; the pressure of the thinned walls is powerless, therefore the first sound is weak and indistinct. This indistinctness of the first sounds is manifold, modified according to the deficiencies of the valves.

In a high degree of the affection, secondary appearances, consecutive diseases are constant as an invariable result of hypertrophy. Thus we find especially overfilling and expansion of the nervous system, hemorrhages in the brain, liver, spleen and the mucous membranes, as also hypertrophy of these organs and appearances of chronic affections.

Additional consecutive diseases are: hydrophical accumulation in the limbs, and swelling on the sheath; emphysema of the lungs; often oedema of the lungs as the cause of death. Expansion of the heart causes these appearances to be more prominent; at the same time recurring dyspnoea, anxiousness, etc., is often observed upon the slightest movement.

In mild attacks prognosis is not unfavorable. By care and sensible usage an animal may continue to live. (Bleeding in particular, is very beneficial for such patients.) But if the disease develops to the high degree already described, such consecutive diseases as hemorrhage in the brain, lungs, spleen and liver, dropsy, rupture, etc., may be expected.

(b) Atrophy of the heart is scarcely to be diagnosticated during life. To the present day fulcrums, which might enable us to identify atrophy specifically as heart affection, are wanting. Auscultation nor percussion can give the necessary information. Most likely the existence of partial atrophy might also be established, associated with the defects of the valves and expansion of the cavities of the heart with atrophic walls.

(c) Rupture and laceration of the heart might be added here as a consequence of the changed substance of the heart. Above all it is to be noted, that rupture of the heart can occur only in cases of abnormal changes of the substance of the heart. The symptoms manifest themselves very violently and are mostly of very short duration. Apparent fear of death, shrieking, stagger-

ing and sudden plunging, great difficult in breathing, irregular tumultuous beating of the heart, a small irregular pulse, are the only perceptible symptoms, which death soon conquers.

Ruptures of the muscle of the heart are accompanied by similar appearances, but they are of somewhat longer duration, because there the rupture is not so much the cause of death as the blood which suddenly flows into the pericardium with all force. The function of the heart becomes momentarily or gradually suspended according to the quantity of the inpouring blood.

Such alterations of the heart which occur in consequence of hypertrophy, as induration, fatty degeneration of special parts, aneurism, generally produce such appearances which coincide with those of hypertrophy, partly with and partly without perceptible deviation. But we will hardly be able to determine with certainty the kind of pathological disturbance we have to deal with in the given case. It will be difficult to find fulcrums for the especial diagnostic. It is sufficient if we can establish the existence of such an alteration in the heart, its nature being no matter of consequence for the time being, since we are unable during life to determine it.

Such pathological changes in the heart are wont to be associated with those general symptoms which are usually found in chronic diseases of the heart. Concomitant are various functional disturbances of greater or less moment, as also various consecutive diseases, which, upon superficial examination, are generally taken for the essential disease and treated as such, naturally without success, as the germs of the disease lying in the heart remain wholly disregarded.

Foreign bodies penetrating the substance of the heart in ruminants have, according to the nature of things, specific symptoms as a result. It is only so far possible to establish these as we have the complicated symptoms of a violent pericarditis and endocarditis before us. As soon as this is observed in ruminants their immediate slaughter should be recommended; the post mortem examination will then disclose the cause of the violent symptoms of the heart.

(To be continued.)

PARTURIENT APOPLEXY.

Paper read before the Ohio State Veterinary Medical Association.

BY W. F. DERR, V.S.

Continued from page 20.

DURATION AND COMPLICATIONS.

The duration of parturient apoplexy is brief. In most cases it terminates favorably or unfavorably in from twenty-four to forty-eight hours. I have seen cases where death took place in a few hours from the first symptoms of illness, and, on the other hand, I have seen cases that were comatose twenty-four hours and made a good recovery. The complications are pneumonia and temporary paralysis. Pneumonia, which is due to the passage of foreign matter, either food or medicine, into the air passages during the time that there is entire loss of deglutition, or where tympanitic with eructations of gasses and feed. This is often the cause of death when the patient has recovered from parturient apoplexy.

PREVENTIVE TREATMENT.

When we see the great fatality of this disease, and we know the subjects thereof are deep milking cows in a more or less advanced stage of plethora, we have every reason to prevent the disease, if we possibly can, by paying strict attention to hygiene, particularly during the last three or four weeks of pregnancy, and immediately after parturition. They should be fed on soft and easily digested food, so as not to cause constipation, and to have plenty of exercise, and as the time draws near, if they are very sthenic, to be put on half rations, with a laxative dose of sulphate of magnesia a day or two before calving, and, if necessary, a dose right after the act, and then to be fed sparingly for three or four days afterwards. In this way parturient apoplexy is prevented to a great extent.

By some authorities bleeding is recommended, and at the same time doses of purgative medicine administered, but I think by diminishing the feed, and, if necessary, giving the cathartic medicine occasionally, the animal ought to be reduced enough to

prevent an attack. If the secretions of milk should come before calving, I should have it withdrawn as often as necessary.

SYMPTOMS.

The animal, some time after calving, say from ten hours to three days, becomes restless, lifts her posterior limbs alternately, looks sluggish and drowsy, refuses her food, the horns are hot, the nose hot and dry, the urine scanty, bowels constipated and if moved at this time, the feces are hard, dry and lumpy; the milk is suppressed in quantity or entirely stopped; the pupils are dilated, the hind legs seem weak and are separated from each other a little; stands very uneasily upon them, and if the animal is not moved, she will fall by a doubling at her fetlocks, but half rises again and so on until she sinks altogether and frequently bellows at her own inability to stand. About this period the disease makes a rapid progress, the animal plunges about in order to regain her feet, but the disease has taken a firm hold on her and she is unable to rise. She may now lay with her head pressed to her side, or she may lay tranquilly on her side fully extended. The rumen now becomes tympanitic from the suspension of its functions, the pulse becomes small, quick and almost imperceptible, her respiratory efforts are slow and infrequent, and after a little time becomes stertorous. The temperature taken at the time usually marks from 96° to 98° Far. This is the stage of the malady when the veterinary surgeon is usually sent for.

DIFFERENTIAL DIAGNOSIS.

This disease is frequently confounded with a disease known as loin fallen, the drop; technically, adynemia, nervosa generalis, or nervous debility, also with parturient fever, which is frequently treated for parturient apoplexy. But in the first named disease there is only a want of ability to rise with a tendency of coldness of the surface and weakness of the pulse, with some torpidity of the bowels; otherwise the animal remains apparently in good health. With the other, parturient fever, an increase of temperature of 102° to 103° is usually the first indication of the malady, a marked tumefaction of the vulva and a discharge therefrom of a dark chocolate color. As in parturient apoplexy, the cow may

maintain a recumbent position, but unlike the former, is due to prostration and not paralysis, and does not become comatose in the early stages as she does in parturient apoplexy.

CURATIVE TREATMENT.

This disease is treated in a good many different ways. Some authorities recommend, I think, powerful doses of medicine. By some, every half hour pint doses of whiskey or brandy, and at the same time a powerful dose of purgative medicine, as much as a few pounds of sulphate of magnesia dissolved with various other drugs. This is all to be added to several quarts of water, and makes half a bucket full, enough to nauseate the patient; and recovery should take place, I think retard it. If I should be called in while the patient was on her feet, I should recommend bleeding from four to six quarts. The bleeding for the purpose of removing pressure from the brain, although the pulse may indicate stimulants rather than depletion. It will be found as blood flows that the tone of the pulse will improve, for the weakness of the pulsation and the debility of the heart's action are the results of brain pressure; but it is seldom the practitioner is called in time to relieve this brain pressure by bleeding. He usually finds her lying on her side.

Medicinally, I recommend about a pint of oil with from twenty to thirty drops oleum of tigli. If there is much excitement of the nervous system, I usually give half ounce doses of chloral hydrate, or chloral ether in one ounce doses. For a stimulant, I use carbonate ammonia in small and oft repeated doses. Apply stimulating embrocation to her spine, have her placed in her natural position, if necessary have a rope around her horns and fixed to a beam above in order to keep her head in a proper position; have her limbs and the whole surface of her body hand-rubbed, and then blankets thrown over the same, the whole to be covered with straw, all but her head; have the milk drawn and the mammary gland well hand-rubbed every few hours; apply cloth wrung out of ice cold water between her horns; keep the head cool, and have the blood sent to the surface of the body and limbs; have the patient turned every few hours, and at the

same time the milk drawn; also give an enema at this time; have the nurse remain with her day and night to see that she is kept in the proper position, for in no disease is there more careful nursing needed. If there is a perfect inability to deglutition, I administer medicine with a stomach pump. If tympanitis should be present, give bicarb. soda with carminatives, hyposulphate soda, etc.; have also used turpentine and ammonia with very good results, but should there not be prompt relief I puncture the rumen with trocar and canula. I sometimes leave the canula remain for the introduction of medicines and formation of gases. Should the animal be unable to rise to her feet after the disappearance of the disease, I administer grain doses of strychnine two or three times a day, with blisters to the spine. In some few cases I have had to use the actual canter before the animals were able to rise to their feet. They usually can turn themselves at this time, but if not, have them turned three times during the twenty-four hours on a good bed kept under them and fed on easily digested food. I am no advocate of large doses of medicine, as I think they nauseate and retard recovery. In the treatment of this disease we must assist nature in relieving the congestion of the brain from the beginning of the attack. Stimulate the action of the skin, promote the action of the bowels, and also stimulate the functions of the mammary gland. All powerful and heroic treatment should be avoided, as well as large doses of medicine.

POST MORTEM.

The blood is dark in color and the veins distended, extravasation of the various serous membranes, blood extravasated over the brain, medulla oblongata and the cervical portion of the spinal cord. The chief seat of the disease appears to be the brain. Here will not only be found congestion, but in some cases actual rupture of some of the vessels in that organ, showing the necessity of bleeding, if it could be done at the beginning of the disease.

SPRING SESSION OF THE A.V.C.—The spring session of the American Veterinary College closed on the 10th of April.

ON A NEW METHOD OF PRODUCING IMMUNITY FROM CONTAGIOUS DISEASES.

by D. E. SALMON, D.V.M., AND THEOBALD SMITH, M.D. From the Proceedings of the Biological Society of Washington, Vol. III, 1884-'86.

More than four years ago* one of us, in the study of the subject of insusceptibility to contagious diseases, reached the conclusion that, in those diseases in which one attack protects from the effects of the contagion in the future, the germs of such maladies were only able to multiply in the body of the individual attacked because of a poisonous principle or substance which was produced during the multiplication of those germs. And also that, after being exposed for a certain time to the influence of this poison, the animal bioplasm was no longer sufficiently affected by it to produce that profound depression and modification of the vital activity which alone allowed the growth of the pathogenic germs and the consequent development of the processes of disease. After several series of experiments, made at that time with only negative results, it became necessary to suspend these investigations until points connected with them, and which were then obscure, should be cleared up, and until it should become possible to repeat the experiments under more favorable conditions. Our expectations in regard to this important subject have at last been realized by the results of experiments recently made in the laboratory of the Bureau of Animal Industry. The bacterium, which we have lately discovered and which we believe to be the cause of swine plague, is killed in liquid cultures by an exposure to 58° C. for about ten minutes.

This method of destroying the bacterium in liquid cultures was resorted to in studying the effects on pigeons of the chemical products (ptomaines?) formed by the bacteria in their vegetative stage, and which are probably dissolved in the culture liquid. The heated cultures used in these experiments were always tested by inoculating fresh tubes therefrom, and, if no growth followed this inoculation, the death of the microbes was considered established.

*Department of Agriculture, Annual Report, 1881-'82, pp. 290-295.

It has been previously determined that the subcutaneous injection of .75 cc. ($\frac{3}{16}$ dram) of a liquid culture of the swine plague bacterium containing 1% of peptone was invariably fatal in the majority of pigeons within twenty-four hours. One half of this dose was fatal to a few only.

As a preliminary experiment, four pigeons were inoculated December 24, 1885, with a liquid culture that had been heated for two hours at 58°–60° C. Three of these (Nos. 10, 8, 9) received subcutaneously .4, .8, and 1.5 cc. of the heated culture respectively. The fourth (No. 7) received 1.5 cc. of the pure culture liquid, into which no microbes had been introduced. No. 9, the one which had received the largest dose, was evidently sick the next day, but slowly recovered. The others did not show any symptoms of illness.

January 11, the one which had received a hypodermic injection of the simple culture liquid (No. 7), and the one which had received the largest dose of heated virus (No. 9), received subcutaneously about .75 cc. each of a liquid culture five days old which had been prepared from a potato culture 15 days old. It is probable that this virus was not so strong, therefore, as a more recent culture from the pig would have been. Both pigeons were sick on the following day. No. 7 died seven days after inoculation. The bacterium of swine plague was found abundantly in the pectoral muscle, in the spleen, kidneys, and liver in moderate numbers.* The other pigeon (No. 9) slowly recovered, but had lost the use of its legs. It seemed perfectly well when killed, 10 days after inoculation. It was quite fat, the crop filled with food. In the pectorals were found imbedded two elongated masses of dead tissue or sequestra about 2 cm. long and 1 cm. diameter, entirely separated from the surrounding tissue by a dense, smooth membrane. In this animal the multiplication of the pathogenic bacteria was purely local, the resistance of the

*In this animal the major part of both pectoral muscles appeared as they had been boiled; they were whitish, bloodless; the fibres could be easily broken and crushed with the forceps. The muscular tissue surrounding the deposits was very dark, gorged with blood. The liver was dark in patches, spleen and kidney pale.

tissues being sufficiently powerful to confine, and finally destroy the bacteria. The sequestra were made up of dead muscular fibre, which was pale and parboiled in appearance. Each was enveloped by a more or less hyaline homogeneous layer. A liquid culture, inoculated with blood from the heart, remained sterile.

This experiment pointed evidently to an immunity obtained from the chemical products of the bacterium of swine plague. To confirm this view another experiment was made.

January 21, three pigeons (No. 11, 12, 13) received hypodermically 1.5 cc. of heated culture liquid in which the bacterium of swine plague had multiplied for two weeks, and was then destroyed by exposure to 58° – 60° C. for several hours. A fourth pigeon (No. 14) was kept as a check. No. 10, which had received .4 cc. of heated virus Dec. 24, now received a second dose, this time of 1.5 cc. For the following three or four days all were somewhat ill, and remained rather quiet, with feathers slightly ruffled.

January 29, when all seemed well, three of the four (Nos. 10, 11, and 12) received hypodermically another dose of 1.5 cc. of heated culture liquid. The other (No. 13) had been fiercely attacked by its fellows, and its head was so injured that it was thought best not to give it an injection at this time, and it was placed in a spacious coop alone. None of the birds seemed much affected by this dose.

February 6, a final injection was practised upon the four, No. 13 having recovered from the effects of its injuries. The dose was, as before, 1.5 cc. All seemed well a few days later.

February 13, one week after the last injection, these birds were inoculated with strong virus, the quantity injected being .75 cc., which had hitherto proved invariably fatal, with the single exception of the bird that had been previously treated with heated virus. Those inoculated were Nos. 10, 11, 12, 13, which had received the heated virus, also No. 14, the check pigeon, which had not been touched, and No. 8, which had received a small quantity, .3 cc. of heated virus, December 24, over 50 days before.

On the following day the check pigeon (No. 14) was found dead; the one which had received the smaller dose (No. 8) was

very ill and died before the next day. The other pigeons were perfectly well. The effect of this dose of strong virus, so remarkable on the unprotected pigeons, was even more evanescent than that of the heated virus in which all life had been destroyed.

There can be no doubt, therefore, from this very positive result, that the pigeons had acquired an immunity through the effect upon the tissues of the chemical products formed by the bacterium in the culture liquid.

A table giving the dates of the injection and the quantity introduced into each animal is below:

Pigeons.	1885.	1886.				Total of Heated Virus.	Remarks.
	Dec. 24.	Jan. 21.	Jan. 29.	Feb. 6.	Feb. 13.		
	Heated Virus.	Heated Virus.	Heated Virus.	Heated Virus.	Strong Virus.		
No.	cc.	cc.	cc.	cc.	cc.	cc.	
No. 8....	.8	.....	.....	.....	.75	.8	Died in 48 hours after injection of strong virus.
" 10....	.4	1.5	1.5	1.5	.75	4.9	Well Feb. 20.
" 11....	.....	1.5	1.5	1.5	.75	4.5	Same.
" 12....	.....	1.5	1.5	1.5	.75	4.5	Same.
" 13....	.....	1.5	.....	1.5	.75	3.0	Same.
" 14....	.....	.....	.....	.....	.75	.....	Died in 24 hours after injection of strong virus.

In the birds that died, (Nos. 8 and 14), the pectoral muscles at the place of injection were pale and friable. Necrosis was already at hand. The internal organs were not macroscopically altered, excepting the spleen of No. 8, which was enlarged and dark. The presence of the bacterium of swine plague in the blood from the heart was demonstrated by liquid cultures, which, inoculated with a minimum quantity of blood, were turbid with the specific microbe on the following day.

The conclusions to be drawn from this experiment we believe are of superlative importance to a correct understanding of the phenomena of contagious diseases, and the methods by which these diseases are to be combatted. They probably apply to all bacterial plagues of men and animals in which one attack confers immunity from the effects of that particular virus in the future.

These conclusions are :

1. Immunity in the result of the exposure of the bioplasm of the animal body to the chemical products of the growth of the specific microbes which constitute the virus of contagious fevers
2. These particular chemical products are produced by the growth of the microbes in suitable culture liquids in the laboratory, as well as in the liquids and tissues of the body.
3. Immunity may be produced by introducing into the animal body such chemical products that have been produced in the laboratory.

TREATMENT OF SPRINGHALT BY SHOEING.

BY MR. MONTAGNAC.

First Case.—A bay gelding, three years after his purchase, showed symptoms of springhalt, and about a year subsequently was brought to Mr. M. While at rest there was nothing in the appearance of his hind legs to attract attention, except a slight contraction of the feet at the quarters and the heels. This condition was about the same in both feet. The exploration of the feet produced no manifestation of unusual sensibility. The lateral cartilages, external as well as internal, were pressed on their superior border against the posterior face of the second phalanx, and seemed to have lost their suppleness and elasticity. When in motion, the animal exhibited the characteristic spasmodic movements of springhalt in an extreme degree, whether walking or trotting, and whether travelling in a straight line or in a circle.

Treatment.—The shoes having been removed, the feet were thoroughly pared, and kept for eight days in a poultice of clay. He was then shod with the “Watrin”* shoes, with directions to work the feet for two hours daily and give him walking exercise. Renewed shoeing, as required, showed an improvement to such an extent, that after some six months of the treatment, the springhalt has almost entirely disappeared.

* The Watrin shoe has two little caulks on the inside of each branch of the sole, close to the heels, upon which they rest, and which they spread.

Second Observation.—This patient was a bay gelding, eight years old, who had had springhalt since March, 1884. When seen in October of the same year, it was observed that when at rest, the heels were elevated and somewhat contracted. The cartilages had lost their elasticity, and were curved forward on their superior border. In action, the horse had well marked springhalt, principally in the left leg, the right seeming to be in a normal condition.

Treatment.—Both hind feet having been unshod and properly pared, the Watrin shoes were placed on them and the animal was returned to his work. A year after he was entirely free from springhalt; cure was complete and he moved naturally and easily.

Third Observation.—A gray mare, ten years old, had springhalt badly in both legs. She was seen in June, 1883, at which time her hind feet were elongated, her quarters depressed sideways, and her heels contracted. The median lacuna of the frog was gone, and the space filled with a sebaceous secretion of offensive odor. The lateral cartilages were indurated and thicker than usual, their superior border resting on the posterior face of the second phalanx. In action sudden springhalts in both legs were developed to such extent that the anterior face of the feet struck the flanks of the animal.

Treatment.—The shoes were removed and feet properly pared and clay poultices directed for eight days, Watrin shoes and bath and walking exercises were ordered, and a month afterwards the animal was returned to work. She was lost sight of and not seen again until eighteen months had elapsed, when no alteration in the action could be detected; only the lesion of the median lacuna of the frog remained, for which proper treatment was directed.

DR. GEORGE FLEMING.

(By DR. WM. HERBERT LOWE, of Paterson, N. J., State Veterinary Inspector.)

Gentlemen of the Veterinary Medical Association of New Jersey:

Permit me to ask your attention to a letter which, although it cannot be regarded as part of the correspondence of the society,

being more or less personal, still it is my duty to make known to you some passages from its contents. The letter in question is from Dr. George Fleming of London in reply to one which I had occasion to address to him some time ago. Dr. Fleming says: "I greatly value the friendship and esteem of my good colleagues on the other side of the Atlantic," and in another place he says: "Give my heartiest good wishes to your worthy President, and to the members of your Association, and with renewed thanks and regards to yourself," etc., etc. These are kind and encouraging words. I especially value them for the *fraternal feeling* they express, and so 'heartily,' for the profession. You know that in our constitution and by-laws, great stress is laid on fraternal feeling. As you were pleased to confide to me the preparation of what is now known as the new constitution and by-laws, adopted since our incorporation under the Act of the Legislature for the promotion of veterinary science and art, I had the opportunity and took special pains to dwell upon the importance of the "promotion of fraternal feeling" as being almost paramount to the scientific intercourse and intellectual advancement which I trust may always mark the proceedings of the Veterinary Medical Association of New Jersey. Following out this sentiment of fraternal feeling, it would be proper for us, gentlemen, I think, to communicate to Dr. Fleming some expression of the regard in which he is held by the profession, not only in New Jersey, but all over our broad land.

In looking at Dr. Fleming's life, whether we travel with him, in imagination, as a young veterinary surgeon, through the Crimean war, China, Syria and elsewhere; or behold him, more recently, when he was offered by His Royal Highness the Duke of Cambridge, Field Marshal Commanding-in-Chief, the appointment of Principal Veterinary Surgeon to the British forces; or consider him as president of the Royal College of Veterinary Surgeons; or in presenting his successful plea for the Veterinary Surgeons' Act of Parliament; or as having the degree of Doctor of Laws conferred upon him by the University of Glasgow, in recognition of services rendered to human and animal medicine; or as honorary life member of scientific societies in all parts of

the civilized world—in whichever of these aspects he is considered, we at last turn anxiously to his books, and ponder over these legacies of his genius which “preserve, as in a vial, the purest efficacy and extraction of that living intellect that bred them.”

The profession is under great if not unspeakable, obligation to Dr. Fleming for having interpreted clearly and conscientiously to the English speaking world, the immortal Chauveau, who “followed nature as a divinity.” A man of letters or of science only could not have done this successfully. Like our own Lian tard, he has been a devoted student in all the departments of anatomy, and so extended and varied is his learning as to command the most sincere respect and admiration. To render Chauveau as Dr. Fleming did was a bold undertaking, but a great triumph. The anatomy of the domesticated animals, so indispensable to the veterinarian, and so fully as Chauveau gives it, called for a mind capable of surveying vast fields of research with general as well as special accuracy. Nothing short of exquisite precision in observation, and clearness of description of the minutest *essential* details, could meet the wants of the student. His patience and painstaking excite our admiration at every step. Whether in physiological anatomy, explaining the organs of health, or pathological anatomy, those of disease, or transcendental or philosophical anatomy, giving the analogies of organs and showing the “simplicity of nature’s plan in the general laws of organization,” he aims, like Chauveau, for the simple truth and the simple truth is always sublime.

Some time ago, when we heard of Dr. Fleming’s serious illness not only were tender emotions awakened, but all felt what a great loss it would be if he were not spared to finish his second volume on Operative Veterinary Surgery. It is true that many excellent works on this subject have appeared during the last half century on the Continent of Europe, where veterinary medicine and surgery have been so nobly fostered by government aid and protection, but we have had no really comprehensive and reliable work in the English language. Dr. Fleming’s great experience and extended knowledge admirably fitted him for the task, as

first volume shows. Nor has he omitted to give us the best results of the French and German veterinary surgeons, or of any others who have contributed to this important department of veterinary practice, and all "based on exact anatomical, physiological and pathological teaching."

Dr. Fleming's work on Veterinary Obstetrics is indispensable to the practitioner, and to the public in the economic sense. Its teachings, as understood by the well informed veterinarian, frequently prevent extreme suffering and death in the higher orders and more valuable of the viviparous animals. The preparation of the work in question was another vast labor which redounds to the credit of our distinguished author. His "Animal Plagues," "The Contagious Diseases of Animals," "Veterinary and Sanitary Police," as well as quite a number of treatises, and a vast number of papers contributed to periodicals, not to mention his *Veterinary Journal*, all go to show his inestimable services to the healing art. But, as we all know, his writings are so extended and varied to admit of adequate mention here. I merely thought that glancing at some of them would for the moment best recall Dr. Fleming's good office in the profession.

Sometimes we meet with an eminent man who seems to care little for anything outside of his profession. Mr. Mill in one of his works speaks of such a man—one who knew nothing except political economy, and who necessarily knew that ill. Had Dr. Fleming confined his studies exclusively to the veterinary profession, he might have given the world a few crude, more or less useful books, but without general knowledge and literary culture they would have lacked scope, clearness, conciseness and that force and felicity of expression which enlighten and captivate the mind of the student. Thus he has lessened and lightened our labor, smoothing the paths in the broad fields of scientific research, never omitting to direct attention not merely to the more obvious expressions of the marvellous laws of animate and inanimate nature, but to those priceless secrets which she reveals only to the most favored of her children. Whether in science or in literature, Dr. Fleming is one of the few men it is safe for us to follow, trusting that, in after days, we may leave the profession still more

advanced than we found it. And, now, when the time has come for him to enjoy the victories of mature life, we are all hoping for his good health, happiness and length of days; and while thus hoping, we are delighted that the dimensions of his fame have extended from the confines of the British Isles to the circumference of civilization.

I now propose Dr. George Fleming for honorary members in the Veterinary Medical Association of New Jersey. I shall not try to conceal the fact that I consider it a great privilege to have had the opportunity of paying even so trifling a tribute to our distinguished trans-Atlantic friend and colleague.

Dr. Fleming was unanimously elected amidst the most hearty expressions of kind feeling and prolonged applause.

REPORTS OF CASES.

A CASE OF TUBERCULOSIS.

BY A. THOMPSON, Student.

On February 6th Dr. R. J. Michener, V.S., was called upon to prescribe for a thoroughbred shorthorn cow, ten years old, recently imported from Indiana, which the owner said had had a cough for about two weeks.

The cow grew no better, and Dr. Michener was called to her on Feb. 18th. He then found her with the following symptoms, viz.; temperature, 103° ; pulse, 70; respiration, 60; a loud rattling cough, and sonorous rale on both sides of the chest. Gave nitrate of potash and belladonna internally and applied mustard plaster to the chest. The cow seemed to improve from this until the 2d of March, when she was again visited and the symptoms found to be less acute. The doctor visited her again on the 11th, and found all her symptoms worse. She grew rapidly worse until the 24th, when (being with calf), she aborted. Prior to this her appetite had been reasonably good, but from the time she was visited on it almost entirely failed. She was visited by Dr. Michener again on the 31st, in company with Dr. R. P. Steddorn, D.V.M.S., who had been called in consultation. She was then much emaciated:

wed the following symptoms: temperature, 103° ; respiration, ; pulse, 65; a loose cough accompanied by a discharge of pus. On auscultation no sound was heard in lower portion of g, and precussion showed dullness in the same region. The gnosis of tuberculosis, formerly made by Dr. Michener, was affirmed and the owner advised to have the animal destroyed, which he consented to do. Accordingly, on April 9th, veterinary geons R. J. Michener, R. P. Steddorn, M.D., and Bruce Fisher, D., also myself, proceeded to the farm where the cow was at, to destroy and hold a post mortem on same.

On examination, in addition to the above symptoms, a very marked friction murmur was heard over the region of the heart. After destroying the animal and removing one fore extremity in order to gain access to the chest, the abdominal walls were punctured and laid open, exposing the peritoneum, which was found to be excessively thickened and covered on the internal surface with many numerous tubercular deposits, with entire absence of abdominal fluid. The liver was found slightly congested, with possibly a process of fatty degeneration beginning to manifest itself. The kidneys and spleen were normal. In the thoracic cavity the pleural sacs were found slightly thickened in the lower portion, the pericardium much thickened and marked by tubercular deposits on the inner surface in the ventricular portion; this accounted for the friction murmur heard before death. The heart was normal. The lower third of each lung was filled by tubercular deposits, infiltrated with mucopurulent matter. At the apex of each lung a large amount of broken down tissue was found. The upper portion of each lung was normal.

LARGE LACERATED WOUNDS IN A COLT.—EXCELLENT EFFECTS OF THE USE OF BROMO CHLORALUM.

BY J. ALBRIGHT, V.S.

On the 14th of March I was called to see an English draft colt which had been gored by a shorthorn bull.

Condition.—I found an ugly looking wound, the colt being able to move around, between the 9th rib, counting from behind

forward in a median line with the elbow, about four inches above the wound. On examining the wound I found that where the horn of the bull struck the colt, it penetrated through the entire intercostal muscles and tore them eight inches in an upward direction. At the lower part of the wound the skin and oblique abdominal muscle were torn to the ribs backward eight inches. Where the horn entered through the intercostal space, at every movement of the animal the air was seen escaping and seemed like the wind emitted from a bellows when worked.

Treatment.—The wound was closed with sutures. That over the abdominal muscle I thought could not be sewed up. I then made a large bandage to encircle the abdomen and then cut a large hole out of the bandage, large enough to prevent pressure over the edges of the wound, but sufficient to keep them closed together. Over the wound four thicknesses of cloth were laid saturated with a solution of bromo chloralum 3 iv, pulver. alo and myrrh, of each 3 i; water, 1 quart. The wound was dressed every four hours with this for eight days, and then only three times a day. Internally the animal received 10 drops of tinct. aconite with 25 of fluid extract of belladonna every four hours. On the third day the colt began to breathe very heavily, the pulse became accelerated, and the animal seemed to be in great pain. The internal treatment was then given every two hours. Soon improvement became manifest, and from this the case went rapidly to convalescence. I have never used an external lotion which seems to act as well as the one used did in this case, and am pleased to have this occasion to recommend it to the profession.

EXTRACTS FROM FOREIGN JOURNALS.

A CASE OF FURIOUS RABIES IN A MARE.

By M. MINETTE.

A ten year old mare, ordinarily of kind disposition, was found one morning in an entirely opposite state of feeling. She had kicked at her mate several times during the night. She was separated and firmly secured. She took her food and drink

readily. During the evening her ill temper and perverse actions increased, and she endeavored to attack the man who had charge of her. The next day she became still more violent and dangerous, kicking and biting every one who approached her.

When seen by Mr. Minette, she presented the following symptoms: she was tied in her stall with two strong ropes; she still partook of her food, but was uneasy and nervous, and became excited by the slightest noise. She tried to kick with her fore feet whoever approached her. Her eye was widely distended and her looks threatening, her countenance had a peculiar contracting appearance resembling a kind of sardonic smile; when suddenly excited she would kick with both hind feet, but at times with one fore foot only. Unable to bite others, she turned on herself, biting her own chest and fore-arm. The fœces are hard and dropped in small quantities, and micturation was painful, with the urine of a dark color. She continued to take her food, her deglutition became difficult, and there was dysphagia and prehension of liquids was impossible. She ground her teeth and tossed her head up and down, and her jaws were seized with convulsive movements. Respiration is accelerated and at times very loud. She already exhibited symptoms of weakness in her hinder parts.

From the history of the case there can be no doubt in the diagnosis. She had been bitten by a dog which had been killed three weeks before, on account of hydrophobia. The test of the presence of a dog brought near her proved most satisfactory. One that she knew, that belonged to the place, and had been, as it were, brought up with her was placed near her, so that she could easily see him, and at once she became furious, and tried to bite him.

Two shots in the region of the heart put an end to her sufferings.—*Recueil de Med. Vet.*

DEATH OF A PONY FROM STINGS OF VENOMOUS INSECTS.

BY J. A. NUNN, A.V.D.

The following account of the death of a pony of mine from bees' stings may interest some of your readers. When out on

tour the other day, my camp, which was pitched near some trees, was attacked by bees, and a pony and two horses suffered severely from the stings they received—so severely in fact, that the pony died next evening, and the two horses are still unfit for work though they were stung four days ago. The pony was stung very severely under the tail and about the abdomen, also, I think, on the tongue. One of the horses, who had in his plunging got rid of his blanket, was a mass of stings from his head to his tail, and the bone at the point of the hock—or rather the whole of the hind leg above the hock, to about the stifle—was so swollen that the animal could only move with difficulty at all. All three animals had to be led in six miles to my headquarters the day after they were stung, and the pony arrived very exhausted and apparently in great pain. I gave him a pint of beer, warm, which seemed to revive him a bit; but about 2 p.m., fever set in, when I gave or rather tried to give (for it could not be got down), a pint of beer warm, with ginger in it; bedded him down well, and put on an extra blanket. At 3 p.m. the pony seemed no worse, but at the same time was no better—he had eaten nothing since he was first stung. About 6 p.m. the servants came and told me the pony was very bad, and when I got to him I found the poor little beast lying down apparently in great pain, and before anything could be done he died. When I reached the stables the last time, the pony seemed to be in great pain, and after one long spasm, lay down quietly and died.—*Pioneer*. (Deaths of equine patients from the stings of insects are sufficiently rare to warrant our insertion of this case. Treatment with ammonia locally and generally might have saved the patient.—Eds. Q. J.)—*Q. J. Vet. Sci. in India*.

RUPTURE OF THE CÆCUM IN CONSEQUENCE OF THE OPERATION OF CASTING.

BY MESSRS PICHENEY and SALONNE.

This case is recorded as an illustration of one of the various complications likely to follow the operation of casting.

A bay gelding, nine years of age, had a chronic swelling of the knee, which, having proved rebellious to the mild treatment of biniodide of mercury ointment, was to be fired over the affected

region. Having during an attempt to operate while standing, shown himself dangerous in that position, it was decided to throw him down. Well prepared by the ordinary low diet prescribed in similar cases, he was cast without difficulty and with very little struggling. After first making some violent efforts, he remained comparatively quiet during the whole operation, making no particular demonstration except a loud groan or grunt, which was attributed to the pain inflicted by the cauterization. When operated on upon one side he was turned over, behaving in the same manner, and still groaning more or less loudly. The firing being terminated, he was allowed to get up, which he seemed to have some difficulty in doing. But when once on his feet, there appeared manifest symptoms of some very severe injury. He was taken with muscular twitchings, and showed signs of colic pains; the face was anxious, and the pulse thready or insensible. A laceration of some internal structure was suspected, and after various alterations of relief and relapse, the animal, after two hours of suffering, suddenly fell and died.

At the post mortem, on opening the abdominal cavity the entire intestinal mass seemed to partake of the lesions. They were all displaced, the cœcum being concealed by the intestinal circumvolutions, and the pelvic curvature of the large colon lying near the diaphragm. The cœcum, which was twisted upon itself and was strangulated by a fold of the small intestine, presented on its superior face a transversal rupture, being torn for some 8 or 10 centimeters, and perpendicularly to one of the re-enforcing bands of the superficial muscular layer of the organ. This laceration was evidently ante-mortem, as shown by the condition of its edges. The other organs of the abdomen presented lesions corresponding to that resulting from the injury to the cœcum, but were otherwise healthy.—*Rec. de Med. Vet.*

RUSHING OF THE FOOT—CONTINUED IRRIGATION—RECOVERY.

BY M. BANDELOCHE.

The good effects which may be expected to follow the judicious application of the hydropathic treatment, are illustrated by this case.

The patient's left fore foot had been crushed by the wheel of

a heavy truck passing over the external coronary region of the member. Two wounds were the result of the accident. One crescent shaped, extending from the heel to the toe, involved the large cartilage. The other corresponded to the quarter, and showed the perioplic band separated from the cutidura, the coronary groove, the perioplic bourrelet and the origin of the podophylous tissue. The parts were congested and badly bruised, yet the animal showed relatively little lameness. The classic treatment, viz., the thinning of the wall, was indicated, but as this was about to be done, it occurred to the author to make trial of the application of cold water, as recently recommended by M. Harsteinsten. Continued irrigation of the wound was undertaken and continued for the space of ten days. During the first three days the lameness increased, but towards the fifth a notable improvement was observed, and on the eighth it was all gone. The superior wound became closed by degrees, the cicatrization progressed well, and in fifteen days the animal was returned to his work.—*Rec. de Med. Vet.*

AMERICAN VETERINARY COLLEGE.

HOSPITAL RECORDS.

BY JAMES WALRATH, D.V.S., House Surgeon.

FRACTURE OF THE INTERNAL LIP OF THE TROCHLEA OF THE FEMUR.

The subject of this article is a chestnut mare used for saddle purposes. The history is rather incomplete, but as far as learned being about as follows: She was found one morning cast in her stall, and after being assisted to rise was found lame on the outside of the hind-leg. A practitioner was called, who diagnosed it stifle lameness, and ordered hot fomentations, which was kept up for some length of time, the animal in the meantime growing lamer and lamer, and the joint rapidly swelling, until fluctuation could be detected, when these abscesses broke and began discharging thick bloody pus, now and then streaked with a yellowish fluid similar to synovia.

About three weeks after the accident, Dr. Liautard was called, and upon examination detected crepitation, but owing to the great swelling of the parts was unable to tell positively whether it proceeded from the friction of the paletta upon the femur, or from a true fracture, yet the latter was strongly suspected. The owner not wishing to have the animal destroyed, thought that he might be able to use her for breeding purposes, as she was quite valuable, and by advice had her sent to the college in an ambulance on March 25. She was immediately placed in slings, as she refused to bear even the slightest weight upon the affected limb. Here she would hang for hours at a time in a limp condition resting the now overworked leg. The treatment employed was simple, the parts being sponged with cold water several times a day to remove the discharge which poured down the leg, denuding it of hair and causing great irritation. Bed sores now made their appearance wherever any portion of the slings came in contact with the animal's body. Bodily temperature was normal, but appetite was capricious. The owner's consent was now sought in regard to her destruction as a worthless and incurable animal, and after some time was granted. She was accordingly destroyed on April 8.

Post-mortem appearances were as follows: On making an incision over the inferior extremity of the femur an abscess was struck containing nearly two quarts of laudable pus. Another was found situated deeper in the structure of the muscular tissue, and extending down to the articulation, and filled with pus similar to that discharged through the external openings, being of a "suppurative synovial" character. On a deeper incision the knife came in contact with fragments of bone, one of which, larger than the others, proved to be the internal lip of the trochlea of the femur. The roughened edges of the fractured portion, as well as the base of the trochlea, had been nearly removed by absorption. The appearances presented by the bones outside of the articulation was as follows: Provisional cicatrix extending all around the inferior extremity of the femur, and extending upwards about five inches, and downwards, involving the superior extremity of the tibia, especially the external and internal tubercles.

rosities. The articular surface of the external facet of that bone was considerably ulcerated, and showed the absorbing process to be in an advanced state. The articulating surface of the patella was darkish in color and showed the same lesions, with considerable absorption and removal of the upper gliding face. The outside was covered by a porcelaineous deposit, which had considerably enlarged the superior portion, but was apparently only adherent to the external structure of the bone.

REMOVAL OF A LARGE MYXO-SARCOMA IN THE DOG—EXCELLENT RESULT OBTAINED BY THE USE OF COCAINE—RECOVERY

BY THE SAME AND W. S. GOTTHEIL, M.D.

On the 22d of March a large pointer dog was brought to the college with a large tumor situated on the right thigh. It was moveable, apparently soft, and doughy to the feel. It covered the outside of the thigh, measuring several inches in length and in width, and had been growing for some time. Having decided to operate on him and remove the growth, five drops of a solution of cocaine were injected upon five points of the circumference of the tumor, and after waiting ten minutes the various steps of the operation were proceeded with. An incision was made in the whole length of the tumor, measuring about ten inches in length, the skin dissected backwards and forwards and the enucleation begun. Its borders were well defined, being oval and quite regular. After carefully separating it from the muscle upon which the growth lay, it was found to be connected by a pedicle with a second tumor, smaller, laying between the biceps femoris and the vastus externus and extending down to the posterior face of the femur. This was also enucleated. After the complete removal, the wound was sewed up and antiseptic treatment applied. The outside growth weighed $1\frac{3}{4}$ lbs.; the inside, ten ounces. The operation lasted about thirty minutes and at no time of its duration did the dog manifest any pain. The local anesthesia produced by the cocaine was most excellent. The wound, however, proved rebellious to cicatrization. Quite a large piece of the skin sloughed away and at the time of writing quite a large portion of subcutaneous tissue is yet exposed and granulating.

The following is the report made by Dr. Gottheil as to the nature of the tumor taken from the dog.

The tumor is very soft, in fact gelatinous, but is distinctly lobulated and encapsules. It is in two irregular parts, the larger one 7x5x4 inches, and the smaller, 4x4x3 inches. Its general appearance and consistency is that of boiled tapioca; but where the fibrous partitions divide off the subordinate capsules, is firmer. There are a few hæmorrhagic foci. Alcohol causes rapid whitening of the mass, and throws a white precipitate in the rather abundant fluid that can be squeezed out of it.

A fresh specimen showed under a moderate power a number of straight interlacing fibres with abundant transparent matter in the meshes; a number of nuclei, the cell outlines being indistinct, are present in it. At places there are collections of small round cells, and there are many minute vessels in the hyaline mass.

Hardened and stained sections showed the same general appearance, but also a moderate number of fusiform or branching cells in the gelatinous basement substance. These walled blood-vessels are fairly abundant, many of them have ruptured. In some places there is a small amount of fibrillar connective tissue. Small round cells infiltrate the mass in greater or less number; in many places these foci are large and closely packed masses.

Diagnosis.—Myxo-sarcoma gelatinosum, malignancy very marked; will probably return *in situ*.

COLLEGE CLOSING EXERCISES.

ONTARIO VETERINARY COLLEGE.

The closing exercises in connection with the Ontario Veterinary College were held in Toronto, on Friday morning, March 26, in one of the large board rooms of the Temperance Hall building. Dr. Andrew Smith, principal of the institution, occupied the chair, and with him on the platform were the Lieut.-Governor, Prof. Goldwin Smith, and other distinguished guests. Dr. Smith in his opening remarks stated that the past year had been the most successful in the history of the college. The Lieut.-Governor, Prof. Goldwin Smith and other gentlemen also gave addresses. Diplomas were awarded as follows:

George Alexander, Strathroy, Ont.; G. H. Allen, Grand Rapids, Mich.; J. L. Andersons, Corey, O.; M. O. Anderson, Selkirk, Ont.; R. W. Ardary,

Pittsburgh, Pa.; E. A. Bergen, Chicago, Ill.; S. E. Boulter, Cheapside, O.
 H. Bowles, Hancock, N. Y.; E. H. Bradley, Lansdowne, Ont.; G. C. Br
 Thamesville, Ont.; William H. Brown, Caledonia, Ont.; B. F. Butler, Sterl
 Ont.; J. F. Butterfield, Montrose, Pa.; James Cannite, Consecon, Ont.; Ge
 S. Cavin, Burr, Ont.; E. W. Cheeseman, Corinth, Ont.; T. Connelly, T
 wanda, N. Y.; W. C. Daniels, Democracy, O.; A. V. Dun, Mansfield,
 George W. Dickey, Forest, Ont.; H. E. Dilatush, Lebanon, O.; R. R. D
 widdle, O.; J. S. Donald, Victoria, Ont.; W. L. Drinkwater, Alton, O
 Thomas Dunphy, Crosswill, Mich.; W. Everest, Altoona, Mich.; R. E. Fol
 Hillington, Lynn, Eng.; B. E. Friel, Stouffville, Ont.; D. Geddes, Bellgr
 Ont.; L. R. Grover, Bath, Pa.; R. J. Hall, Millbank, Ont.; J. W. How
 Belleville, Ohio; Eugene B. Ingalls, Mohawk, N. Y.; S. Jones, Walsh, O
 F. A. Jones, Balsam, Ont.; J. F. Jones, Newark, Ohio; Wm. Joyce, Ma
 wood, Ont.; D. M. Keller, Williamsport, Pa.; A. H. King and J. E. King
 Thomas, Ont.; Wm. Kirk, Gordonhill, Ont.; T. E. Macauley, Coldstre
 Ont.; D. Maclean, Mitchell, Ont.; D. W. Mack, Ontario; H. S. Manb
 Brockville, Ont.; R. J. McCallister, Bailieboro', Ont.; T. C. McCahey, W
 ham, Ont.; M. C. McClain, Jeromeville, O.; W. P. McClure, Brampton, O
 A. McDonald, Paisley, Ont.; Asa McQueen, Liverpool, N. Y.; E. M
 Kings, Ill.; R. Parks, New York City; G. C. Pritchard, Greenville, Mi
 J. M. Ramsey, Mongolia, Ont.; A. J. A. Robillard, Ottawa, Ont.; Loui
 Robinson, Buffalo, N. Y.; George A. Scott, Parkhill, Ont.; John Scott, A
 Ont.; J. J. Shoemaker, Bluffton, Ind.; John R. Litterly, Scranton,
 Charles L. Smith, Brantford, Ont.; E. B. Smith, Toledo, O.; John Spe
 Brooklyn, Ont.; Wm. Standish, Owen Sound, Ont.; E. Harcourt, Stan
 Ottawa, Ont.; R. P. Steddom, Dayton, O.; Wellington T. Stewart, Harris
 Ont.; C. H. H. Sweetapple, Oshawa, Ont.; Hugh Thompson, Hornellsv
 N. Y.; J. J. Toussaint, Milwaukee, Wis.; S. J. Wallace, Orangeville, C
 Adam Watson, Toronto, Ont.; H. S. Wende, Erin, N. Y.; M. P. White
 Youngstown, O.; John Williams, Lima, O.; E. T. Williams, Stouffville, C
 Thomas Wilson, Wingham, Ont.

S. Schwartz, primary in Materia Medica; R. H. McInich, D. Bell,
 Baxter, A. C. Wolfe, primary in Anatomy.

The following were the prize winners in the senior class:

Pathology—Silver medal, G. W. Dickey; 2d prize, A. King; 3d,
 Scott.

Anatomy—Ist, G. W. Dickey; 2d, R. R. Dinwiddie; 3d, John Scott.

Entozoa—1st, R. R. Dinwiddie.

Microscopy—1st, F. E. Anderson.

Physiology—1st prize, R. R. Dinwiddie; 2d, W. McClure; 3d, J. S.
 lace.

Chemistry—1st, R. R. Dinwiddie; 2d, W. P. McClure.

Materia Medica—1st, F. Scott; 2d, G. W. Dickey; 3d, R. R. Dinwiddie.

Best general examination—1st gold medal, given by the Ontario Veter
 Medical Association, John Scott. Honors, J. E. Anderson, G. W. Di
 R. R. Dinwiddie, A. King, W. Kirk, W. P. McClure, Asa McQueen, L. A.
 inson.

MONTREAL VETERINARY COLLEGE.

The examinations of this institution, which have been in progress for the last two weeks, were concluded Tuesday, March 23.

Out of six final students four were awarded the diploma, viz: T. A. Houghton, J. D. Wythe, C. C. Dyer and George Slaughter.

Sir William Dawson said that though the number of those receiving diplomas is not large, those who had received them might be congratulated on having gone through a very thorough course, for which they were greatly indebted to their instructors. It was a most fallacious method to judge a school by the number of its graduates. He hoped the time would come when, through Government aid, this school would cease to be a burden to its Principal.

Mr. Blackwood, representing the Quebec Council of Agriculture, said that he had occasion during the year to examine into the condition of the men who had been educated at this college, and he was gratified to learn that every one whom he had been able to trace had been successful. This was a remarkable record and an encouraging outlook to the men now leaving the college, to whom, as an old man, he might be allowed to give one or two bits of advice. Certain temptations peculiarly surrounded men of their profession. Let it be said of each of them, as he had once heard it remarked of their Principal, that no money could affect his opinion of a horse, and let them be careful about drink, which it would be hard for them to avoid. He had himself, in England, in 1836, come to the conclusion that his only safe course was to let it entirely alone, and he had not since departed from that position.

Mr. Billings, of Nebraska, one of the examiners, had one thing to add to what had just been said, and that was that if there was one thing worse than rum was the horseman. The veterinary surgeon who had his office in a stable, and who spent his spare time talking horse slang and soiling the floor with his tobacco, degraded his profession. The man that courted his clients in this way would get the worst of it, while he who took the place where he belonged, at a respectable distance from them, would be respected by them and would get their money instead of their getting his. Mr. Billings ascribed to Dr. McEachran the very first place on the continent as a veterinarian educator, and denounced the diploma mills and cheap subscription societies that passed for colleges all over the continent. With the exception of four, such was the character of those in the United States. He hoped yet to give his friend here a tussle for the first place. The United States was going to be the first country with a State in it intelligent enough to see that if specialists forswear professional gain to give themselves to teaching and investigation the State should pay them. That State was Nebraska. It was original investigation which gave Rudolph Virchow the first place in their regard, and it was that which gave Dr. McEachran so high a place on this continent.

Dr. Hingston, in adding his quota of advice to the young men, said that it was their duty to take the position of gentlemen in society and to uphold the honor of their profession by their demeanor as well as by their requirements. He quoted some eminent examples of veterinary men who took the highest social places.

Dr. McEachran indorsed the advice which had been given, as well as what had been said of the success of the graduates. A number of those now held teaching positions, and although, from his own experience, he could not recommend the occupation to them as a money-making one, they could, at all events, assure themselves that those who had passed through the course required by this college were qualified to teach.

The proceedings were then brought to a close.

SOCIETY MEETINGS.

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

The second annual meeting of this Association was held in Morristown, New Jersey, Thursday, April 8, 1886. The President, Dr. W. E. B. Miller, occupied the chair and called the meeting to order. A large number of members were present, and many gentlemen interested in the advancement of the veterinary profession.

The minutes of the last regular meeting, which was held at Camden on the 10th of December, 1885, were read by the Secretary and adopted.

The President then delivered his annual address, in which he congratulated the Association on the advancement it had made in its increase of membership. He paid a delicate tribute to the late Drs. A. P. Weeks and Wm. G. Schmiegelow. He made also excellent remarks on the present and future usefulness of the Association and the great advantages of combined over individual effort.

Matters of important general business relating to the running of the Association were then discussed, and amendments to the By-Laws were presented to the President.

A number of new members were then called for, after the report of the Board of Censors, recommending them, had been admitted.

Dr. Lowe spoke at some length of the defects of the present United States Army Veterinary Service, but owing to the pressure of business, resolutions which he wished to have passed were laid over for further consideration.

The Secretary then read a letter from Mr. George Fleming, of England, which led to remarks from Dr. Lowe, who proposed him as an honorary member of the Association. The gentleman was unanimously elected.

The questions of ethics and of a uniform rate of charges were then fully discussed.

At the election of officers the same Board as the one acting last year was re-elected.

Drs. Sattler, Latherman and Leis were appointed delegates to the United States Veterinary Medical Association, also to the New York State Veterinary Society, and the Pennsylvania State Veterinary Medical Association.

Drs. Dixon and Krowl were appointed essayists for the next regular meeting. The meeting then adjourned to meet at Long Branch, on the second Thursday of August next.

W. H. LOWE, D.V.S., *Secretary.*

NEW YORK STATE VETERINARY SOCIETY.

The regular meeting of the Society was held on Tuesday, April 13, the resident, R. W. Finlay, in the chair.

A large number of members present.

The minutes of the last meeting were read and adopted, with slight alterations.

Dr. Cattanach read a paper on "Canine Distemper."*

On invitation Dr. Liautard opened the discussion by stating that the paper was one that treated of a subject that was of considerable interest, and the views of the essayist could hardly meet with much opposition. The treatment as laid down by him, was one that was generally followed by himself. He objected to dog shows, because they were a means of spreading the disease. If they were to be held, they ought certainly to be under the supervision of a qualified veterinarian, who, at the present day, was not placed at his proper value by those having charge of these dog exhibitions. The disease was an infectious one, and dogs should be carefully examined before being allowed to enter any dog show; the eruption could be detected at once, as in measles, which he thought it very much resembled. He had noticed the eruption almost at the start, perhaps not plainly marked, but enough to be noticed. If it was true that it had a specific microbe, what was the microbe? In many cases he had seen St. Vitus dance follow. He had had good results follow the use of nit. silver.

In answer to Dr. Dixon, the essayist said he considered well bred dogs were more liable to the disease, but perhaps due to too good care.

Dr. J. S. Cattanach said he thought that terriers, collies and hounds were more likely to take the disease. He thought, perhaps, if the breeds were crossed, would add strength and so lessen the chances of getting distemper. Dr. R. A. McLean agreed with the idea of in-breeding being a means of increasing the dog's chance of having the disease. He said he considered that distemper resembled *parvovirus* more than measles.

The Chair took exception to this, stating that the eruption was entirely different in the two diseases, but agreeing that it was quite difficult to tell the two from each other for the first three or four days, but after that there was a well marked specific eruption. In answer to Dr. Field, the essayist said there was redness, as there was opacity of the cornea and aqueous humor.

Dr. Dixon called attention to the fact that the mongrel, who was never taken to the dog shows, had distemper. It might be that domestication had considerable to do with the trouble.

Dr. Liautard asked if any experiments had been made as to the contagiousness of the disease.

Dr. R. A. McLean said a sister of his, seven years old, was taken sick with *parvovirus*, and a pet dog of hers was in her company all the time, not coming in contact with any other dog during the time, and had developed a well marked case of distemper.

*The crowded condition of this issue obliges us to postpone its publication to our next number.—[ED.]

Dr. J. S. Cattnach said he had never seen a case of distemper where eruption was not present, when in the early stage. He spoke of a puppy male which on the first day of the show had paralysis, was taken away and treated with distemper and recovered. The fellow puppy remained, took the prize and died.

In answer to Dr. Johnson, the essayist said he considered that a dog having distemper, might be liable to have it again, but it would be of a mild form.

Dr. Liautard said the case spoken of by Dr. McLean was interesting, and should be made public, as it might lead to some light thrown upon the subject and perhaps enable us to drop the term distemper, and he would move that a committee be appointed for the purpose of investigating what relationship existed if any, between the disease classed as distemper in dogs, scarlatina and measles or any other disease analogous to it. The motion was seconded by Dr. Field and carried, the chair naming as such committee: Drs. Liautard, C. C. Cattnach, R. A. McLean and Dixon.

A vote of thanks being extended to the essayist for his paper, and reports of committees being in order, —

Dr. Pendry, chairman of the Legislative Committee, reported that the bill had passed the Assembly by a large majority, and was on the order of the day for reading in the Senate. There had been more opposition in the Senate than had expected, but he expected to win over the two or three Senators who seemed to object to the bill, in a few days. He had again been to Albany in company with Dr. Field, who had kindly offered to go if he could be of any help; he was glad to accept the offer, and the good help he had been able to give. While he was in Albany he had succeeded in getting the bill out of the Committee of the Whole and ordered to a third reading, without an amendment. He referred in high terms to the faithfulness with which the Hon. John T. Windolph had followed the bill, and of the valuable aid rendered him by the Hon. Jacob Contor; also to Senator Fagan for his address to the Senate on behalf of the bill. He expected to hear that the bill had passed in a very short time.

On motion, the report was received and the committee continued, and the thanks of the Society be sent by the Secretary to the above named gentlemen.

Dr. Delessor, chairman of committee appointed to enquire as to place for next meeting, reported that they could get a room at the Cooper Union for \$4.00 a night. The report was on motion, received.

Dr. Ogle moved, seconded by Dr. J. S. Cattnach, that the Society hold its meetings in the lecture room of the American Veterinary College.

In relation to the motion, Dr. Liautard said when the Society was first formed, in 1873, it held its meetings in the New York Veterinary College, but that after the second death the meetings were held in the American Veterinary College. The lecture room of that college was certainly not as highly furnished as the room they were in, but it seemed more appropriate, and they had been treated there for nearly twelve years; he thought they might as well go back there if the Society seemed short of funds.

After some further remarks from others, as to the meetings held there for years among the best, Dr. R. A. McLean moved as an amendment, seconded by

C. Cattanach, that the Secretary be instructed to engage a room at the Cooper Union, as reported by committee.

On the question being called, the amendment was put, and declared lost. Drs. R. A. McLean, C. C. Cattanach and Delessier alone voted for it.

The original motion was put and carried, and afterward made unanimous motion of Dr. R. A. McLean.

Dr. R. A. McLean proposed the names of John Foy, V.S.; John T. D. Donnelly, V.S.; John C. Shiffort, V.S., and Otto V. Lang, for membership, which were referred to the Board of Censors.

The Secretary read a letter from M. J. Tracy, M.R.C.V.S., Army Veterinary Surgeon, asking to have enclosed circulars, relating to the low standing of Army Veterinary Surgeons, endorsed by the Society and forwarded to Washington. After some discussion, during which it was stated that this had already been done and that the remedy was in their own hands by leaving the service if it was not agreeable, and thus letting the Government feel the loss of their services, the letter was ordered to be filed.

At the request of the chairman of Legislative Committee, Drs. R. W. Finley, J. S. Cattanach and S. S. Field were appointed to go with the committee to Albany, as a delegation to wait on the Governor to get his signature to the bill, that it should pass the Senate.

Dr. R. A. McLean being appointed essayist for next meeting, a motion to adjourn was carried.

W. H. PENDRY, D.V.S., *Secretary*.

CORRESPONDENCE.

VETERINARY EDUCATION.

CHILLICOTHE, OHIO, March 20, 1886.

Editor American Veterinary Review:

In the February number of your excellent journal there appeared an article, under the head of "Imperfect Veterinary Education—Is it traffic in Veterinary Diplomas?" and over the signature of James A. Waugh, V.S., Ontario.

Had Dr. W. not allowed his enthusiastic exuberance on the subject of veterinary education in America to lead him into unreasonable exaggerations and unnecessary and unbecoming personalities, we should have been happy to re-echo his sentiments and say amen to his prayers. He states that his "article was not written for the purpose of inciting any personal discussion, but merely to expose some practices which are inimical to the interests and welfare of veterinary science." If the motive which

actuated the production of that article is correctly expressed in the words we have just quoted, the writer of said article must have very wisely omitted from his otherwise meritorious production every one of the personal, impertinent, and irrelevant statements to which we shall presently refer.

He says: "It is needless to mention that one session was sufficient to gratify their (the students of 'said veterinary college') ambition to study in said veterinary college." In connection with the context this is for several reasons a most remarkable statement, but for none more than for its ambiguity. If Dr. W. meant to state that diplomas are obtained at "said veterinary college" for only an attendance of one session, he makes an erroneous statement. If he means that students after attending one session elsewhere to complete their course, he makes another; or if he means that the students of "said college" are deficient in preparation to become educated veterinarians, he makes a statement equally as remote from the truth. His words are capable of a diversity of interpretations, but, in view of what follows, we opine that the last one we have given them is probably the correct one; for he says: "Is it any wonder that some of the State veterinary medical associations do not hesitate to admit quacks and charlatans into membership in their respective associations and even grant them certificates of membership as veterinarians?" This, in the connection in which it is used, is beneath contempt. Why has Dr. W. not frankness enough to state what he apparently means, viz.: that the alumni of "said veterinary college" sympathize with "quacks and charlatans?" And again we have Dr. W. saying: "The majority of the regular graduates composing the body of the Ohio State Veterinary Medical Association are graduates of the same veterinary institution. Therefore the purport of that circular or letter, which Prof. Lian received from them, and which was subsequently published in the AMERICAN VETERINARY REVIEW, was evidently intended as a mild rebuke to the 'short cut' method of instruction as taught and practised in that veterinary college. However, there was an urgent necessity to offer it as an unpardonable insult to the other veterinary schools and colleges in the United States and Canada."

The writer was present at the meeting of the said association when the important question of veterinary education was discussed, and unless we be very much mistaken, no "rebuke" in the sense intimated by Dr. W. was intended for any particular college, or the method of instruction practised at that college; and moreover, it is obvious from the manner in which that "circular, or letter," was received by "the other veterinary schools and colleges in the United States and Canada," that no insult was intended.

"The profession in Ohio," as Dr. Detmers says, "ranks with that of any other State," and its members are not so blissfully ignorant as to suppose that the "said veterinary college" is the only one that turns out graduates, some of whom are only partially educated. Their object was not to insult nor to rebuke, but was to expedite the consummation of a higher standard of veterinary education in America; for with them it is a perspicuous fact that in many of the colleges the so-called matriculatory examination is a farce and a disgrace; that the course of study is not only the "said veterinary college," but also in many others entirely too brief, and that men are graduated from all of them who are a disgrace to our noble profession in more ways than one.

Let us be done with these foolish personalities and exert our most influence to persuade all the schools and colleges to adopt the suggestions offered by the Ohio State Veterinary Medical Association, not only in their "announcements," but in reality.

Yours very respectfully,

L. S. BUTLER, V.S.

OBITUARY.

T. SPENCER COBBOLD, M.D., F.R.S., F.L.S.

This esteemed and well-known member of the medical profession, died on the 20th of March last. He was principally known to veterinarians as a lecturer to the Veterinary College of London, and for his excellent works on the Parasites of Domestic Animals.

(With the Author's Compliments.)

A HORSE'S TROUBLOUS LIFE.

A long-legged, guileless colt
 My mother brought me forth upon the Grampian hills ;
 And as I gambolled round her day by day,
 In happy ignorance of the world outside,
 I recked not, cared not, thought not,
 Of the purposes to which in after life
 My equine form subservient should be made.
 A faultless head, arched neck, and shoulder sloped,
 Broad back and loins, with croup symmetrical ;
 Tail well set on ; deep chest and barrel round ;
 Legs, arms, and thighs proportionately formed,
 The judges of the district did me pronounce—perfection.
 Oh ! had my neck been ewed,
 My shoulder straight and legs deformed,
 A slave of me my master would have made,
 But kept me in my happy home, where all
 The troubles I have known in life could not have me o'erta'en.

Three brief years passed—the happiest of my life ;
 Though, like the schoolboy, oft I chafed,
 And fancied I was hardly wrought and roughly checked ;
 Yet, save the terror which I felt when jockey—dumb—
 Upon my back was placed, and iron bit secured
 Within my mouth—which terror me did cause
 To plunge and fight for freedom, e'en as the negro slave
 Doth try to break the cruel bonds from off his arms ;
 Or as Leviathan, when by harpooner struck,
 Makes one wild dash, re-curves his mobile tail,
 And in his mighty wrath projects
 The sea in tiny spray great height above its level ;
 Or as the elephant—the Mammoth of the forest—
 When, by the aid of his own species tamed,
 Man binds around his limbs the withes and cords
 (Which erst shall humble and subdue his rage),
 Makes energetic efforts to ensnap the strand
 And madly roars, and uproots with his proboscis
 The saplings whose misfortune 'tis near him to grow,—
 So I, with wild and frantic bounds and shrillest neighs,
 Did 'tempt my liberty to gain.
 But all my efforts did not me avail ;
 And save conventional disease, as strangles,
 Colds, cuts, bruises, wounds,
 I knew not much of agony or pain ; though by the “vet.”
 I blistered was, for splent and shoulder-slip,
 And with the cruel shears my tail was—docked.

A keen and grasping man,
My owner thought to hurry on my age,
And barbarously punched out the teeth
Which erst are termed, by men well versed
In matters scientific—deciduous.

Five years passed o'er—when, tempted
By large bribe, my master sold me to a firm
In Ednia's city fair; and then
My troubles 'gan in very earnest,
And thronged around my head in manner unsupportable.
I first was led to where a station stood,
And in a horse-box placed with others
As unsophisticated as myself.
I then was frightened by a scream—unearthly,
Devilish, as though poured out from throat
Of monster from the deep; and thence
Transported to my future home,
And placed, 'midst many others for the night,
In stable close and warm,
Where exhalations foul my lungs assailed.
And in the day in turn my work performed,
Though scared by rumble, roar and rattle
Of vehicles and shouts of men.
My breath thus poisoned in the night,
And in the day my nerves strung up to highest pitch,
I soon succumbed to cold and fever low;
And after weeks of suffering, my strength returned;
But, woe is me! I roarer was, as bad as ever paced the street.
And now chicanery was brought to bear
On my unlucky frame, by coper, who
Possession of me gained.
By means of tricks and dodges—as straps
Fixed round my nose, and careful turning
In the street when trotted—I was made
To cheat many honest and industrious yokels,
Who took a fancy to my noble form.

Ah me! it would be tedious to recount
The numerous tricks, so underhanded,
By which a gang of copers managed to relieve
The pockets of the innocents of their superfluous gold;
How, falling lame on one fore-foot,
In the other, *beaned* I was, to make
My action equal, and thus deceive the purchaser;
Then, failing in my wind, and made the
Subject of a chronic cough, time after time
I had forced down my throat, laudanum,
Chloroform, and lard and shot.

Next, in both fore-feet dead lame I fell,
 And my good master 'gan to think
 All hope of further gain was gone;
 But no! a scientific man called in, declared
 That I was suffering from navicular disease,
 And then most cleverly my nerves did cut;
 And thus deprived of pain and sense,
 I walked and trotted with freedom and with ease.
 And after giving time the wounds to heal,
 And on my body flesh and fat to put,
 I was in market-fair once more shown off,
 And once again became the means by which
 Unwary men were cruelly undone.

But even yet my troubles did not cease,
 For spavin large, developed in my hock,
 From which much agony and pain I did endure
 In spite of iron hot, of blister, and of punch.
 And after being punished thus without avail,
 My master most unmercifully did pound
 The skin, to make it swell, and thus the spavin hide;
 And that my action might be equalized,
 He further, on my other hock
 The same barbarity did perpetrate.

And now, with orbits puffed, with eyebrows
 Dyed, and bishoped teeth, I stand with
 Trembling limbs and knees o'erbowed,
 To wait the termination of my most unhappy fate,
 Bewailing man's inhumanity to us, the brute creation,
 Who, championless, are born to work, to suffer and to die.

—THOMAS WALLEY, *Principal Edinburgh Veterinary College.*
 (Reprinted from the "*Animal World*.")

NEWS AND SUNDRIES.

PASTEUR INSTITUTE.—An international institute named after Mr. Pasteur is to be erected in Paris at an estimate cost of 80,000 francs. The subscription list is open to the world at large, and will no doubt soon be covered.

NO PLEURO-PNEUMONIA IN KENTUCKY.—Dr. E. F. Hagyard, State Veterinarian of Kentucky, reports that State is now free from pleuro-pneumonia, and that with the assistance of Federal Veterinarian Dr. Wray 111 cattle were killed and buried and

very sanitary measure was taken to insure the cattle of Kentucky from similar outbreaks in the future.

CIVIL SERVICE IN BROOKLYN.—The Civil Service officers of the city of Brooklyn have met with difficulties in the first attempt to carry on their duties. At the first examination of candidates for veterinarians to the fire department and board of health, one of the candidates was accused of having obtained possession of the questions before the proper time and to have thus been able to prepare himself for the race. He won it and was appointed.

CONNECTICUT STATE VETERINARY MEDICAL ASSOCIATION.—At the last meeting of the Connecticut Veterinary Medical Association, the following board of officers was elected: President, E. J. Ross; First Vice-President, E. A. McLellan; Second Vice-President, A. D. Sturges; Secretary, Thomas Bland; Treasurer, J. Tibbals; Censors, W. J. Sullivan, A. D. Sturges, A. L. Brown, E. A. McLellan, G. H. Parkinson.

NEW YORK COLLEGE OF VETERINARY SURGEONS.—The New York College of Veterinary Surgeons graduated the following at the close of their last session: Dr. George W. Gilbert, Saywood, L. I.; John J. Nay, N. Y.; J. I. D. Donnelly, Astoria, O. Y.; J. Thifford, Chambersburg, Pa.; Otto A. Van Long, Williamsburg, N. Y.; Fremont L. Russell, Fayette, Me.; J. A. Erickwell, M.D., N. Y.

GEORGE FLEMING.—The name of George Fleming is recommended as one of a body of commissioners to be formed in England to investigate Pasteur's method of inoculation for hydrophobia.

PROPOSED NEW VETERINARY COLLEGE.—At the recent meeting of the Board of Regents of the Nebraska State University steps were taken for the establishment of a College of Veterinary Science, and the plans adopted guarantee a school of the highest degree of efficiency. It is rumored that Dr. F. S. Billings is to take charge of the organization of the College and of the faculty.

DR. HOPKINS, Territorial Veterinarian of Wyoming, went recently on a tour of professional investigation and has re-

turned to Cheyenne, his headquarters. He made a brief visit to Washington while East, but could learn of no new development in connection with the contagious-disease-legislation at the capital.

INDUBITABLE CONGENITAL TUBERCULOSIS.—An eight month foetus was taken from a cow, the subject of advanced tuberculosis. The placenta and uterus were free from tuberculous lesions, but in the lower lobe of the right lung a nodule the size of a pea was detected, containing four caseous centres. The bronchial glands were congested and also tuberculous. The liver contained numerous grey granulations. Microscopically the tubercular structure was confirmed; masses of epithelioid cells with giant corpuscles containing tuberculoar bacilla were discovered.—*London Lancet*.

DR. PAAREN NO LONGER STATE VETERINARIAN.—In view of his very evident unfitness for the position of State Veterinarian, the general criticism of his course while holding that office, and the lack of harmony between him and the State Board of Live-Stock Commissioners, it has occasioned much surprise that Governor Oglesby did not long ago remove Dr. Paaren. The reason assigned for this has been the difficulty in finding a man qualified for the work who would give up his regular practice. This seems a poor excuse for retaining an objectionable officer, for surely the great State of Illinois is able to employ competent men for any work to be done. Dr. John Casewell, of Chicago, recommended by the State Board of Live-Stock Commissioners for the place, has, it is stated, been appointed by the Governor.—*National Live-Stock Journal*.

EXCHANGES, ETC., RECEIVED.

Besides our list of home and foreign exchanges received, with a number of pamphlets and reports of Agricultural Boards, we acknowledge communication from J. C. Meyer, Sr., V.S.; W. H. Lowe, D.V.S.; A. Thompson; J. Walrath, D.V.S.; J. Albright, V.S.; D. J. Dixon, D.V.S.; W. Pendry, D.V.S.; L. S. Butler, V.S.; W. S. Gottheil, M.D. and Dr. Wehenkel.

AMERICAN VETERINARY REVIEW.

EDITED AND PUBLISHED BY

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AND OTHER VETERINARIANS.

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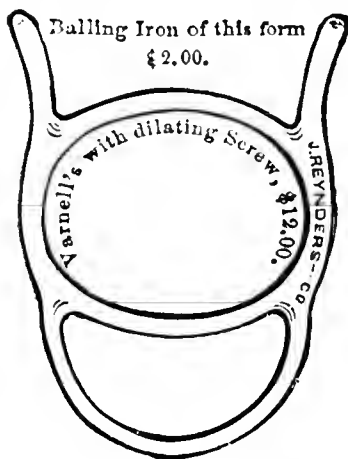
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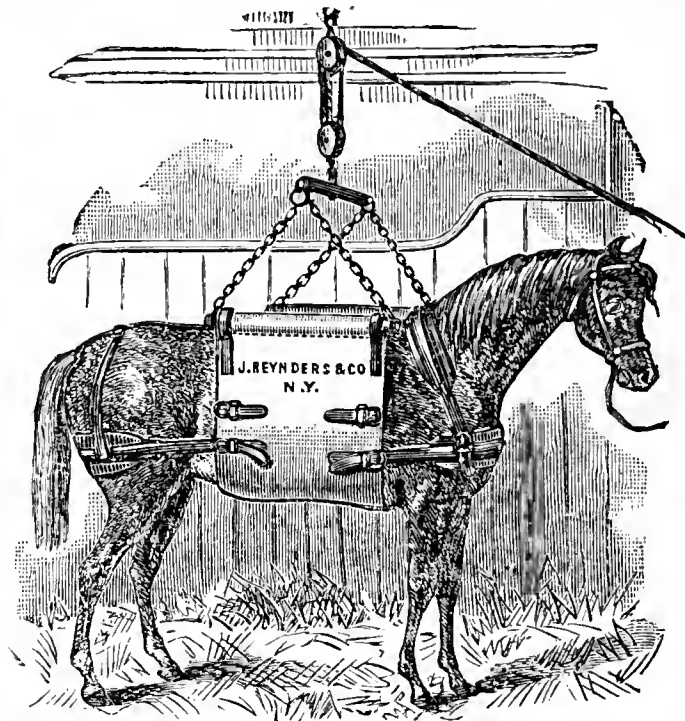
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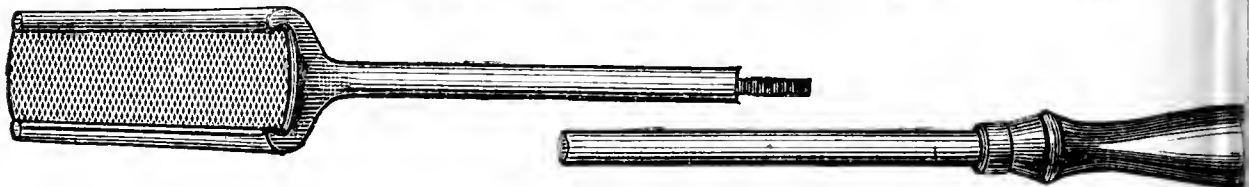
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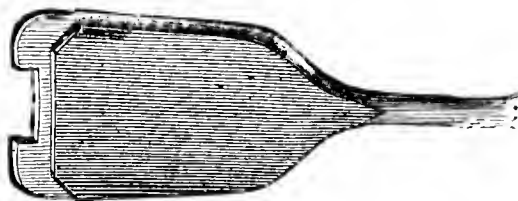
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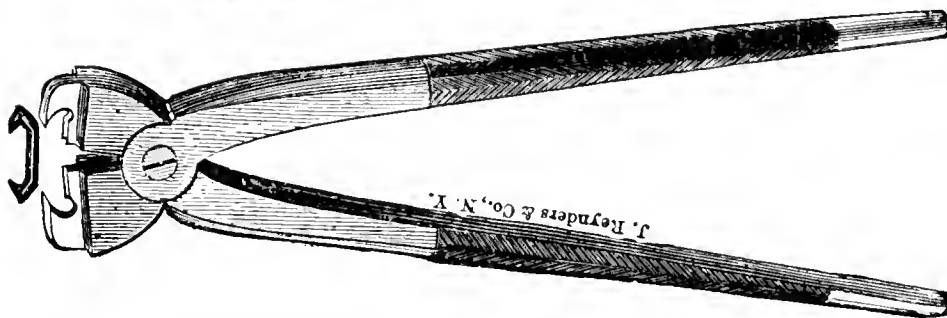
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AMERICAN VETERINARY REVIEW,

JUNE, 1886.

EDITORIAL.

REGULATING VETERINARY PRACTICE IN THE STATE OF NEW YORK—"the veterinary bill has been signed, and is now law"—applications made in previous years have always failed—why—this final success due to harmonious feeling and action of the committee of the State Society, and principally on the part of its chairman, J. Pendry, to whom the credit of the passage of the bill is due—they receive a unanimous vote of thanks from the society—the bill is not as perfect as it might be, but it ultimately gives the death-blow to quackery. RABIES—importance of inoculation in presence of doubtful cases—in this instance it proves most satisfactory, confirming the diagnosis and probably deciding the bitten person to submit himself to treatment—still the period of incubation is too long, and it may be fatal to wait its results—government commissions sent from all parts of Europe to France, to investigate Pasteur's methods—the United States alone remains behind—investigations from this country looked for and obtained only through personal enterprise. THE PLEURAL SACS OF THE HORSE—these are distinct and separated—the posterior mediastinum is not imperforate—observations of Mr. Barrier—the importance of this fact in a clinical point of view. TUBERCULOSIS, not pleuropneumonia, in Maine—report of Professor Michener—error in the report upon the nature of the disease made in agricultural papers—Dr. Bailey ought to correct. VACCINE IN HOG CHOLERA—letter of Dr. Salmon to the *Breeders' Gazette*—the vaccine of Pasteur fails him, as it did Dr. Gerth in Nebraska—are hog cholera and rouget the same disease—importance of the question.

REGULATING VETERINARY PRACTICE IN NEW YORK STATE.—The veterinary bill has just been signed, and is now law—signed, John P. Windolph." These were the words of the telegram read by Dr. W. Pendry, Secretary of the New York State Veterinary Society, at the last meeting of that body, held a few days ago.

At last, then, the veterinary profession in the State of New

York is legally recognized, regulated and protected. For years we have been making application for this to the Legislature at Albany. For years in succession bills have been presented, discussed and amended, and for years the legislative body has adjourned without perfecting the law which was so urgently asked for. But when certain changes which had been proposed were, recently, consummated, when the various veterinary bodies became willing to forego private feelings in order to organize into one society, when the interests of one had become the interests of all, the result was no longer to be doubted, and "the bill is now law." To this desirable harmony, thus at present existing amongst the veterinarians of the State, and to their desire to obtain the legal recognition which would sooner or later have been accorded to them by the public; to their willingness to concede not only what was needful in the past, but as much more in addition, in the present time; to all these causes, in part, is the success due which has now been secured. But the greatest portion of it belongs justly to the committee which had been appointed to represent the society, and chief amongst these to the chairman, Dr. Pendry. Indeed, this is true to such an extent that, in a great measure, to him personally belongs the credit and honor of the passage of the bill, in like manner as to Dr. M. Payne, years ago, belongs, we believe, the credit of the passage of the anatomy bill, by which our medical schools have been enabled to obtain all the dissecting material they need. Dr. Pendry has done well, and the unanimous vote of thanks which was passed in acknowledgment of his services by the Society, was but a just recognition of his efforts in behalf of the profession.

The act, as passed, is somewhat different from the bill which was originally presented, and published by us in our issue of February, and upon a cursory reading, the profession in the State would seem rather to have been lowered than elevated by accepting such legislative regulation. But, a more careful reading of the wording and a careful consideration of the sense of the law, will bring to the mind the unavoidable conclusion that it is not only a regulation of our profession, but is a death blow to quackery. Though on a larger scale, it is perhaps much the same with

the measure adopted in England some few years ago. But its acceptance was perhaps a necessity. It was probably "now or never," and if any one feels like blaming the action of the New York State Veterinary Society for their action, a consolation remains in the fact that the society may indulge in the reflection that while the present generation may derive but little benefit from the act, the coming generation will profit by it to such an extent that before many years have passed, no one in the State of New York will be found practicing veterinary medicine without having been regularly educated and graduated. The State of New York was the first to establish veterinary schools in this country, and it is within her territory that the first State Veterinary Society was organized. It is to her honor that she is the first to give legal recognition to the profession, and to take a decisive step towards the extirpation of quackery in the country.

RABIES.—We have on various occasions called the attention of veterinarians to the great advantage they might derive from the investigations made in rabies by Pasteur, as a means of doubtful diagnosis of that disease in dogs. A case which will be found in the present issue, reported by Dr. Walrath, House Surgeon to the American Veterinary Hospital, illustrates the benefit that may be obtained by the cerebral inoculation of the medulla oblongata of dogs which have been put to death on suspicion of suffering with rabies, and at the post mortem of which, though the lesions might justify the diagnosis, yet a doubt might still remain. In the case recorded, the dog had presented at the autopsy comparatively trifling lesions, perhaps sufficient to have been satisfactory in past years, but still of such a character as scarcely to justify a trip from America to Europe. Experimental medicine came to the rescue. Another dog was trephined, a portion of the medulla of the suspected dog was introduced under the dura mater of the second, and twenty days afterwards death resulted from dumb rabies. A telegram was sent at once to the interested parties of the result obtained, of the confirmed diagnosis, and the unfortunate young lady who had been bitten by the first dog was placed under Pasteur's treatment, and will undoubtedly escape a most horrible death. In connection with this case, however, the

incubation has been longer than any other recorded by Pasteur. It is difficult, perhaps, to explain the cause of it, but if this length of time is to remain unaltered in all cases, it naturally suggests the inquiry whether it would not be too late then for a patient to go to Europe from the United States, and would Pasteur's treatment be likely to be successful. To overcome this difficulty, the imperative necessity of being provided with the means of treatment at home becomes apparent. There has already been a Pasteur Institute organized in New York, which may secure to us the means of overcoming this difficulty. But there is something peculiar in the inaction of the National Government, which has thus far quite ignored the whole matter. The attention of Congress and of the Executive may easily be and very often is absorbed by matters of much less interest than the investigation of the work of Pasteur in rabies, and, truly, in all the contagious diseases he has already studied. What great difference exists between the American Government and the Governments of Europe, nearly every one of which has sent delegations or commission of investigators to his laboratory, Turkey, Italy, Germany and England having now in Paris medical commissions, sent there for the purpose of educating themselves in the science and experience of the inoculation treatment. Yet all that Americans seem likely to know on these vitally important subjects will probably be the fruit of private enterprize and philanthropy. Not that this will not be as good and valuable as though the Government had paid for it, but a little official prestige in the matter would not have been at all improper or in the least out of order. Friends and members of the veterinary profession will be pleased to find the name of George Fleming on the list of the delegates who represent the English Government in Paris.

PLEURAL SACS OF THE HORSE DISTINCT AND SEPARATED.—Ever since the publication of the excellent work on "Equine Anatomy," by Rigot, in 1827, and reprinted since by almost all veterinary anatomists, and even in the works of St. Cyr, Lafosse and others, it has been held and taught by all clinical writers that the pleural sacs of the thorax of the horse are in communication with each other, and that for that reason unilateral pleuritic

effusions did not exist in that animal, but that, on the contrary, when pleurisy was present, both sides of the chest were always more or less filled with fluid.

At one of the meetings of the *Société Centrale de Médecine Vétérinaire*, Mr. Barrier presented a paper upon the imperforation of the posterior mediastinum, and the distinct independence of the two pleural sacs. In this paper, which we print to-day, the reader will notice some important conclusions, which, while they may be of but little importance from a therapeutical point of view, will alter considerably the pathology of the lesions which are met in the disease mentioned. A careful consideration of the subject will be of use to veterinarians in explaining an error of diagnosis which may sometimes occur, and by which unilateral pleuritic effusions have often been mistaken for inflammation of the lungs.

TUBERCULOSIS IN MAINE.—In our last issue we made a few remarks upon the prevalence of tuberculosis amongst many of our registered herds, and mentioned its presence, amongst others, in the Maine Agricultural College. State Veterinarian Dr. G. Bailey had addressed a communication to us in reference to the measures to be taken in the premises, and we understand that Dr. Salmon, of the Bureau of Animal Industry, has given advice somewhat similar to ours. To make assurance of a satisfactory issue in the matter still more sure, however, and in compliance with a request of the college authorities, the opinion of Dr. Michener was applied for, and his report has been duly presented. It will be found in the present number of the *REVIEW*. The entire herd was found to be diseased, and were one and all destroyed. The post-mortem examinations plainly revealed the tuberculous character of the lesions, and confirmed the diagnosis.

In the presence of the great and widespread excitement which has prevailed in the West on the subject of contagious pleuro-pneumonia, it is to be regretted that the agricultural press should not be more thoroughly informed in respect to the difference which exists between that and tuberculosis disease. Tuberculosis is not contagious pleuro-pneumonia, and *vice versa*.

We were much surprised to find in so intelligent a paper as

the *National Live Stock Journal*, (in its weekly edition of May 4th), an editorial on "Pleuro-Pneumonia in Maine." One disease is perhaps no more desirable to have amongst our cattle than the other, but if the public should adopt the opinion that the contagion of pleuro-pneumonia exists only in Maine, even if confined within the limits of the Agricultural College farm, it might create an alarm which would result in a demand for extreme sanitary measures, which, after all, might be quite unnecessary. It seems to us that State Veterinarian Bailey might correct that statement. We believe Maine to be free from pleuro-pneumonia, and she ought to defend her good reputation in this particular.

PASTEUR VACCINE IN HOG CHOLERA.—A letter to the *Breeders Gazette*, from the able veterinarian of the Bureau of Animal Industry, Dr. E. Salmon, will be found reprinted on another page in relation to our remarks on the experiments made in Nebraska to test the value of inoculation for hog cholera. The results obtained by the Doctor in testing the value, not of the process of vaccination, but of the vaccine itself, as imported from Europe, will prove highly interesting. Knowing, as we do, that every scientific precaution has been observed by Dr. S. in conducting the experiments he has made, we see no alternative except to conclude that the vaccine which was sent to us and delivered to him has entirely failed to produce the results anticipated, not only after being kept five weeks, but even after the very short period of three weeks from the date of its preparation.

How these results are to be explained may be difficult to say. It can hardly be supposed that the vaccine failed because it was improperly prepared, the supply having been obtained directly from Mr. Pasteur's laboratory. Has it been devitalized by exposure to heat and dampness and other changes consequent on a sea voyage? Or, after all, is it, as Dr. Salmon seems to be inclined to believe, and as he has expressed to us in our correspondence, that the rouget of the French and the hog cholera of America are entirely different diseases? These are all-important questions to determine, and perhaps no man is better able to do so than the head veterinarian of the Bureau of Animal Industry.

he veterinary profession will, no doubt, anxiously look for a definitive and positive answer to the query, whether the diseases are the same. If they are not identical, of course the virus of one disease cannot answer for the other, but if they are not diverse, what reason can be imagined for the failure of Dr. Salmon in both of his experiments, if it is not accounted for by the nature of the virus?

ORIGINAL ARTICLES.

DISEASES OF THE HEART IN DOMESTIC ANIMALS, ESPECIALLY THE HORSE.

BY FR. BLAZEKOVIC.

(*Translated by J. C. Meyer, Sr., V.S.*)

Continued from page 58.

DISEASES OF THE VALVES AND OSTIUM.

Inflammation of the valves occurs very rarely independently, mostly in consequence of endocarditis. Symptoms indicating inflammation of the valve are; continued fever with a high temperature of the body, a quick, hard, intermittent pulse, and sometimes difficult breathing, though only if associated with other diseases of the heart.

Auscultation and the cardiac sounds, which no doubt change at every alteration of any valve, give excellent physical signs for the diagnosis. Inflammations which disturb the function of the valves and produce roughness of the same, will by reason of the current of blood cause friction and murmurs. Respecting these appearances, I advise their close scrutiny in defects of the valve in general. Undoubtedly, sufficient factors exist in the organism which can call forth abnormalities of the valves. As we have already seen in the preceding chapter, these are generally similar to the products of inflammation, hence an inflammation of the valves is no rare occurrence. It, however, often escapes observation, and is not recognized until it is a developed defect of the valve.

Abnormities of the valves and ostia in domestic animals exist much oftener than is generally supposed, and as has thus far been established by post mortem examinations. If the great number of emphysematous horses were carefully dissected, we would soon be convinced of the frequency of the abnormities of the heart valves, more so since they are present in nearly all other diseases of the heart.

As long as the defects of the valves are still in a state of formation, they do not exercise any injurious influence upon the good health of the animal, and are therefore not heeded by the physician; but in progressive development they assume all those symptoms which are found in affection of the heart. Emphysema of the lungs, dyspnœa, oft-recurring congestion of the brain, dizziness (in horses when at work), are constant attendants of defects of the valves.

Next to the state of the pulse, abnormities in the murmurs and sounds of the heart are the best characteristic indications of defects of the valves. In developed chronic abnormities of the valves the tension of the pulse is mostly normal. Sometimes it is hard and full, or soft and empty, according as the combination of the anomalies of the valves determines. Generally the pulsations are normal, sometimes they are reduced as regards number, because in a given number of pulsations some may be wanting or lost; at least they are not perceptible to the examiner. But the number of pulsations in given intervals are never increased. This may be said of all deficiencies of the valves without exception. According to my observation this phenomenon is always connected with diseases of the valves.

The intervals between the wanting or lost beats are not always equal; often they are longer, often shorter. For instance, after 3-4 normal beats an imperfect motion or a total failure of the pulse, then several beats in quick succession, as though nature wanted to retrieve the lost beat; then another pause, followed by normal beats. In some cases the fourth, eighth, thirteenth, seventeenth, also the twentieth beats are wanting. After that, shorter intervals set in again which are subjected to mathematical precision in time and number. Often the morbid beat is found to be but very little

weaker than the normal; the difference is so slight as to be perceptible to the experienced practitioner only. "For practice, the frequent taking of the pulse of sound horses is to be recommended."

The pulsation of the heart changes according to the importance of the defects of the valves. After quickened motion it is very easily discovered. The heart-beat discloses a throbbing violent motion to such a degree that, for instance, in insufficiency of the cuspid valves the first beat is felt less distinctly than the second, while often the first sound predominates and the second is duller. If no inflammation exists, the pulsation is less and approaches the normal.

In all serious defects of the valves a more or less developed engorgement of the jugular vein is present.

Auscultation of the cavities of the heart is of special importance. Every alteration which occurs on the valves, such as curving, shortening, growing together, thickening, roughness of the surface, etc., will naturally call forth a disturbance in the heart's mechanism whereby the normal current sounds and friction murmurs also become altered. We may safely accept the existence of defects of the valves as soon as the heart-beat and pulse show a constant dissimilarity and irregularity, and if one or both cardiac sounds become permanently changed by murmurs, without their origin being traceable to nervous excitement or abnormal condition of the blood.

The perceptible murmurs may be classified as follows: (1) bellows murmur, (2) file murmur, (3) rasp murmur, and (4) saw murmur.

Changes of the orifices of the heart may exist, if they are slight, without generating abnormal sounds of the heart; but in important anomalies of the ostia the abnormal sounds are always present. According to the intensity and change of the heart-sounds, the abnormalities may be judged. The more important the alteration of the valves, the stronger the murmur. Furthermore, the rougher the surface exposed to the current of the blood, the harsher the sound. For instance, file and rasp murmurs indicate bony and cartilaginous degeneration. But since the anomalies

of the ostia and alteration of the valves always appear at the same time, a corresponding combined murmur arises, which falls either on the first or second tempo of the heart-beat and supplants the cardiac sound and attains the following diagnostic importance:

(1) Murmur of the first tempo: change of the arterial ostia, insufficiency of the orifices of the auricle.

(2) Murmur of the second tempo: change of the orifice of the auricles, insufficiency of the arterial ostia.

(3) Double murmur: simultaneous affection of the different ostia, insufficiency of several valves.

A. *Insufficiency of the Bicuspid Valves.*

The percussion sound is dulled to a greater extent owing to the constant developing of eccentric hypertrophy; the impulse of the heart is more forcible, clearly felt, and corresponds to the expansion of the dullness. Upon auscultation the first cardiac sound is scarcely perceptible, changing into an undistinguishable murmur which supplant the pure sound. The second sound interrupts the murmur upon the setting in of the diastole. In a violent form of the disease the first and second sound follow another so closely as to make a distinction impossible.

B. *Stenosis of the Ostia.*

More energetic heart-beat; percussion indicates an intense dullness; auscultation shows that the diastolic sounds (2d sound) are occasionally lengthened to such a degree that they consume the first or systolic sound. The murmur is caused by friction on the rough surfaces of the valves of the blood flowing in and out of the ventricle. The audible and sensible scraping and whizzing indicate a roughness of the altered ostia. The blood must force its way through the narrowed space.

If, at the same time, stenose be united with insufficiency, then an abnormal murmur is audible during systole and diastole.

C. *Insufficiency of the Aortic Valves.*

They give the appearance of simple or eccentric hypertrophy of the left ventricle which are perceptible by means of auscultation and a more violent heart-beat; a murmur which supplants the second cardiac sound.

The roughness on the lower end of these valves, or in the aorta, sometimes produces a murmur during the systole of the ventricle and a similar sound is also heard in the aorta. In a more developed insufficiency the inpouring blood calls forth a buzzing noise after systole. The murmur arising during systole of the aorta becomes intense in the region of the valves, spreads downward to the apex of the heart and then can scarcely be heard, at all.

D. *Stenosis of the Orifices of the Aorta.*

Hypertrophy of the left ventricle and a corresponding enlargement are the characteristic signs. The percussion sound and the pulsation of the heart-beats are moderately increased. The incapacity of the valve to close increases, the heart-beat attains great force. The first murmur is distinctly discernible from the second sound. If the contraction of the valves be considerable, a loud booming sound is heard; often a double murmur is present.

E. *Insufficiency of the Tricuspid Valves.*

An enlargement of the right auricle is present, with dullness of the percussion sound in the upper region of the heart. Swelling and pulsation of the jugular vein is always constant. In place of the first cardiac sound this change causes a murmur and an indistinct cardiac sound in the right ventricle, which is very weak or not at all perceptible.

Herewith, I have given a few fulcrums by which the defects of the valves can be identified. In utilizing these a diagnosis can be made, if not with absolute certainty, at least with great probability. At all events sufficient moments can be found for practical purposes.

The course of the anomalies of the valves may be very tedious, that under circumstances animals attain old age; but often the disease has a rapid fatal termination. Prognosis, in reference to cure, is unfavorable, and, according to the degree of the affection, doubtful and more or less difficult to determine.

(*To be continued.*)

CANINE DISTEMPER.

A paper read before the New York State Veterinary Society,

BY C. CATTANACH, D.V.S.

Mr. President and Gentlemen :

I will endeavor this evening to entertain you with a brief treatise on the subject of "Canine Distemper," sometimes called catarrhal fever in the dog. This disease shows itself under different forms; some writers recognize five, but to simplify matters I will select two, the catarrhal and the nervous, mentioning the others simply as complications which may arise in conjunction with these two principal forms, although they may exist individually in some cases.

The cause is due to a specific poison which enters the system and may remain latent for some time. The period of latency is indifferent; it may not last twenty-four hours, or it may last a month. To illustrate this, I may mention I have exhibited at the dog show different litters of puppies, and they all showed symptoms in from three to four weeks. Adult dogs have contracted it much sooner than the puppies (by this I mean dogs which I have exhibited.) I am of opinion that puppies should not be sent to shows, as I never knew any to escape distemper that were sent there; and the mortality in puppies is a very large per cent. The virus will remain for a long time about the dog and kennel after recovery, so it is dangerous to introduce other dogs.

Among other causes are exposure to cold, and being kept in badly drained or ventilated apartments. Improper feeding, teething and worms are also mentioned, but I do not think these would be primary causes. Some writers on the subject say a dog may be predisposed to the various forms, as for instance, food or worms may excite the intestinal form. Well bred dogs are more prone to an attack than mongrels, and are less able to stand an attack. I should have previously mentioned that the origin of the disease is unknown, but was first recognized in the seventeenth century, and in some parts of the world was unknown. It was not known in Australia until recently, when it was first brought there by a dog imported from England.

Symptoms of the catarrhal form.—At first you may notice fever, dullness and febrile symptoms, such as dry nose, thirst, quick pulse, although sometimes before this sneezing often occurs; the appetite may be lost, or only partial; the urine scanty and dark; a discharge of tears from the eyes and a swelling of the eyelids; the nose also discharges a thin mucus, and the discharge from the eyes and nose finally become purulent. These symptoms may all be present, but in some very mild cases all that may be noticed is the discharge from the eyes, maybe with a slight cough and little or no impairment of the appetite. In other cases the symptoms are more severe; conjunctivitis may set in; ulceration of the cornea and an escape of the aqueous humor may occur. The disease is usually in the form of a bronchial catarrh, involving the nasal passages to a greater or less extent; this is usually accompanied at first with sneezing, or very often a dry cough, which afterwards becomes moist; the cough is continued at short intervals, or it may come on in fits; the dog becomes dull, listless, and likes to hide away from the light. This is seen especially where the eyes are involved. In some cases the disease may be of a mild form, such as a slight febrile condition; the nose runs, and perhaps a few tears from the eyes.

The catarrhal form may be also complicated with gastric irritability; food is not retained in the stomach, and the vomit is of a yellow, tenacious character; in some cases even water is not retained. In these cases the liver is usually more or less involved, being torpid. This state of affairs may exist even when there are little or no catarrhal symptoms. In other cases the bowels may be irritable, and diarrhoea or a dysenteric discharge, which has a very bad odor, may ensue. In cases of this kind the result is generally serious, and unless quick attention is bestowed the patient may last but a short time. The irritability may be so great as to cause gastritis or enteritis; this is especially seen where dogs have been improperly fed, that is to say, where the food has been of a coarse kind.

Pneumonia may also be a complication. This is diagnosed by the manner in which the dog breathes—the cheeks puff and sink in expiration and inspiration; the eye sinks in the head,

the pulse quick and weak, and a rise of temperature. On auscultation over the chest, mucous rales, due to the bubbling of air in the mucous or the other various symptoms, are noticed according to the stage of the disease.

Conjunctivitis is a common complication, but more often occurs in the early stages; the symptoms are swollen eyelids, very much inflamed, which meet over the eye so as to shut out light—in fact, the dog cannot open them—and from them at first there is a watery discharge, which gives way to a mucous one, finally becoming purulent. Sometimes white spots are noticed on the cornea, which enlarge and interfere with the sight; and an opacity of the aqueous humor is sometimes seen, but my experience is that when convalescence takes place these gradually clear up and disappear, and *that too* often without any interference. It is said that dogs which have been fed on sugar, sweet cakes, etc., are more prone to affections of the eyes.

Epileptic fits are no uncommon complication, and may occur in some instances as a primary symptom; these may be brought on through teething or improper feeding.

The nervous form differs in different cases, but usually follows an attack of the catarrhal form; the symptoms may be nervous twitchings in various parts of the body, such as in a fore or hind extremity, or in the head; the movements of the legs may be of an irregular or jerky kind; these symptoms may be of a greater or lesser degree. These symptoms are often seen during sleep. Epileptical convulsions may also occur; they make the dog go all one-sided, howl plaintively, and finally lose consciousness. As I said before, some maintain this form is aggravated by food, presence of worms, and at this period of the year by changeable, wet weather. Paralysis may affect different parts, such as the face, legs, etc., but is mostly seen in the hind extremities. This however, may not affect the sensibility of the dog.

Sometimes, after both the nervous and catarrhal form, vesicular eruptions are seen on the skin, especially under the abdomen, inside the arms and thighs; they cause a scaly scruff to be thrown off, and to an ordinary observer would resemble mange.

Profalaxus.—To begin with, I believe dog shows spread the

sease, and that if dogs are to be sent to them they should be quarantined *on their return* and not allowed to come in contact with those that have not had an attack of distemper; or would suggest washing with water and disinfectants. In cases where one or more puppies in a litter were affected, by giving the healthy ones a mild laxative dose of medicine, I have noticed that the rest of them escaped, or only had a mild type of the disease. For this I would prefer the use of grey powder, to be followed a few hours later with castor oil, proportioning the dose according to the size and age of the dog. After recovery I would suggest that the kennels and utensils be properly disinfected and cleaned.

Treatment.—It would be difficult to mark out any direct line of treatment, as the disease varies. The indications are to treat the symptoms as they occur, keeping the dog in a well ventilated, clean apartment. Some recommend emetics, others cathartics, but in my opinion the main thing to look to in the beginning is the stomach, which, if attended to, it will be found easier to treat the other symptoms. Give the animal as much nourishment of the easily digested kind as is consistent; such as beef tea, lime-water in milk, brandy and water, etc., and after the febrile symptoms disappear use tonics.

TUBERCULOSIS.

REPORT OF THE INSPECTOR OF ANIMAL INDUSTRY.—THE
ANIMALS ALL AFFECTED WITH TUBERCULOSIS.

(*Portland Daily Press.*)

269 W. 38th STREET, NEW YORK, }
April 29, 1886. }

His Excellency, Frederick Robie, Esq., Governor of Maine:

Dear Sir—Pursuant to an order from Hon. Norman J. Coleman, United States Commissioner of Agriculture, I started on the 14th inst. for Orono, Maine, to advise with your State Veterinarian, Dr. George H. Bailey, as to what disposition should be made of the cattle belonging to the State College Farm. Arriving

there before the State authorities I had ample time to study carefully the history and surroundings of the herd.

From G. W. Gowell, Superintendent of farm, I learned that for the past eight or ten years there occurred an occasional death among the cattle, and as nearly as I could judge from his description these animals were affected with the same disease that prevailed at this examination.

The trouble was evidently a pulmonary one, a more or less persistent cough, irregular or hurried breathing and emaciation being witnessed in all.

I was led to examine the hygienic surroundings. The barn is a large one and has ample room for the stock. It is well lighted and thoroughly ventilated; the air being surprisingly pure as I entered the building early in the morning. The stalls are kept very clean, as the animals themselves show. The manure is thrown in the basement, but a free current of air prevents any appreciable odor from rising to the stable. The water is from a cistern which, being above the level of any stable drainage, is pure and wholesome. The feeding is judicious in every sense, and the food, both grain and hay, is of the best quality.

From the history of previous cases, and upon examining a few of the cattle that presented the most marked symptoms, I was able to diagnose the disease as tuberculosis beyond any reasonable doubt.

Upon the arrival of the State authorities it was decided to destroy some of the worst cases for post-mortem purposes. The animals thus selected were some that State Veterinarian Bailey had previously examined and placed by themselves in the horse barn. I will refer to some of them by name and give the lesions presented. Cow *Pansy* presented numerous miliary tubercles throughout the left lung, and in the right were masses of tubercular deposits of various sizes, situated chiefly near the apex of the lung. These masses had become cheesy or calcareous.

Hyacinth presented smaller aggregations of grayish white nodules throughout the substance of both lungs.

Flossy—Both lungs affected; in the right lung near its centre was noticed a large abscess, due to softening and breaking down

tubercular deposits. The left humero-radial or elbow joint is considerably enlarged and had given rise to lameness during the past few months. The knee joint of the same leg was first involved, but now appeared healthy. The synovial membrane and extremities of the humerus and radius were in a diseased condition, but presented no calcareous deposits or appearances of tumatoid arthritis. The prepectoral and brachial lymphatic glands were found to contain much cheesy and calcareous matter.

Cows *Edith*, *Crummie*, *Mildred*, *Blanche*, and others showed extensive granulations on the costal and pulmonary pleuræ, which in some instances firmly united the lungs to the ribs.

Helen Hart, in addition to similar lesions of the thoracic organs, revealed well developed tubercles in the udder. Some of these had broken down, and their contents were discharged into the milk sinuses, and tainted the milk—a fact that had been observed by those in charge for some days.

It does not appear necessary for me to detail the lesions found in individual cases beyond this, except to remark that other organs of the body were frequently involved—liver, intestines, &c. The calves presented mostly diseased conditions of lymphatic glands and intestines; diarrhoea and other digestive disorders being here most marked.

Out of the forty-seven (47) head destroyed, *all* (four or five calves were not examined, but were killed because of being the offspring of diseased dams, and having occupied the infected barn,) presented symptoms which, as you probably are aware, were accurately interpreted in every instance, even where but very small and deep-seated portions of lung tissue were involved.

The uniformity of these symptoms and pathological lesions must prove to all thinking minds (whether little or *nothing* is known of the appearances of the disease in question) that there existed in each individual member of the herd one and the same disease.

That this disease is both hereditary and contagious seems also evident from the facts that calves scarcely one month old were mainly affected, and that those animals recently bought and

placed with the diseased cattle show upon post-mortem examination the initial lesions of this malady.

In answer to those who contend that this disease was caused by improper feeding, or lack of sufficient ventilation and exercise, it is only necessary to remind you that tuberculosis, like small-pox and similar diseases, is a specific malady; one that can *only* be spread by coming in contact in some way with its special and determined infecting agent.

The assertion that cotton seed meal had anything to do with the origin or spread of this disease is simply ridiculous.

Taking into consideration, then, the facts that a very large proportion of the herd (all, we might almost say) were affected with a disease communicable not only from animal to animal, but from animal to man; that in the future, death after death would occur yearly; that scarcely by any possibility could calves be raised from any of these cows that would reach maturity free from this pestilence; that animals purchased elsewhere and placed with this herd would (as past experience proves) soon become diseased; and that the barn itself is now infected, and must be left vacant for a considerable period; parts of it (floors, etc.,) removed and burned, and a thorough and repeated disinfection be restored to,—it becomes apparent to all, I think, that the only safe and proper course to pursue was the one advised, *i. e.*, the slaughter of the entire herd.

Some of the meat might have been used as food had it not been for the prejudice that was so generally felt against it. For some time it has been impossible to sell even the butter from these cows and I was assured by everyone likely to know, that under no circumstances could a pound of the butter be disposed of now, or even months later.

The swine on the farm that had been fed largely on the milk of these cows, were examined, and one pig nearly a year old was killed and carefully examined, but no traces of tuberculosis could be detected. The butcher who kills the pigs raised on the farm states that in some instances the liver has appeared diseased. In conclusion I can only recommend that when other animals are purchased care be taken to buy from herds where this disease

is never existed, and that each animal be examined at the time of purchase by your State Veterinarian.

Very respectfully,

CH. B. MICHENER, V.S.,
Inspector Bureau of Animal Industry.

I fully concur with the above report.

GEO. H. BAILEY, D.V.S.,

Commissioner for Maine on Contagious Diseases of Animals..

WHY PASTEUR'S VACCINE FAILS TO PREVENT HOG CHOLERA.

BY DR. E. SALMON.

[Extract from *Breeders' Gazette*.]

In the *Gazette* of March 18 is a paragraph headed "Inoculation for Hog Cholera a Failure," which, though it appears anonymously, seems to have been inspired by some one connected with the Nebraska experiments who was unduly anxious to make it appear that these investigations had been conducted with the strictest scientific accuracy," and that some points of great importance had been settled by them beyond controversy. I will briefly enumerate the claims which are referred to: First, the germ contained in the Pasteur vaccine is alleged to exist in large numbers in hogs that had died of American swine plague; second, the French *rouget*, for which Pasteur's vaccine is prepared, is therefore identical with American swine plague; third, the Pasteur vaccine failed to protect from American swine plague, consequently "Mr. Pasteur's 'inoculation theory' has been tried and found wanting by the cold logic of facts."

The reader will no doubt agree with me that these are broad and sweeping generalizations to be given to the world in such positive language when the questions involved had only been tested by a single experiment. If so much science can be built up so easily and in so short a time, surely some of those who have been working upon those problems for years with equally good facilities must have sadly neglected their opportunities or must have been lamentably weak in their perceptive faculties, or we should have known much more about hog cholera than has been published up to this time.

In the April number of *THE AMERICAN VETERINARY REVIEW* Dr. Liautard adds some facts which were unaccountably omitted in Dr. Gerth's report. It appears that the vaccine was furnished by Dr. Liautard, who obtained it from M. Pasteur. The vaccine was prepared about September 25 and was not used until November 2, an interval of over five weeks. It is well known that vaccines of all kinds rapidly deteriorate with age, and M. Pasteur informed Dr. Liautard simply that he had known the vaccine to keep good for five weeks. It is evident, therefore, that the keeping qualities of this vaccine have not been tested very accurately, and that while it may remain active for five weeks it may also become worthless in that time. Dr. Liautard states that he furnished the vaccine not with the design of testing the value of the process, but of proving the efficiency of the vaccine matter after it had been imported from Europe. He thinks that the success of the operation was hardly to be expected, and he considers it an error, to express it very mildly, to conclude from this experiment that the inoculation theory is wrong.

We coincide entirely in the opinion that an exaggerated importance has been attached to the Nebraska experiments. We fail to find any evidence of that strict scientific accuracy which is claimed for them, and we are very certain that the conclusions go far beyond anything that can be legitimately demonstrated from the reliable part of the observations.

It seems to us, however, that Dr. Liautard's conclusion is as little justified by any known evidence as is that of Dr. Gerth, which he criticises when he writes: "If the cold logic of fact (a single fact) seems to disprove the theory in Nebraska, what shall be said of the same logic of facts (in the plural) which prove it to be almost a certain success, and almost the only prophylactic measure against hog cholera in most of the countries of Europe, whenever the process has been repeated with fresh vaccine?" He has furnished no evidence and we have failed to find any in the literature of America or Europe, which establishes the theory on any reasonable basis, that the disease which Pasteur is vaccinating for is identical with the hog cholera of America; and it would appear that the use of the American term, hog cholera, in

connection with this European disease of swine is somewhat premature, and may turn out to be a glaring misapplication of the vaccine.

Dr. Liautard refers to the errors of Dr. Gerth because he feels it to be his duty to correct them, for otherwise they "might result in serious injury to the interests of the swine-breeders of the country." The writer of this communication is quite inclined to look at what he conceives to be the errors of both of these gentlemen from very much the same point of view that is adopted by the able editor of the REVIEW; and at all events he is certain that an account of his experiments with the Pasteur vaccine and his conclusions in regard to it will be of interest and, he hopes, of some value to the readers of the *Gazette*.

In October last Dr. Liautard had the kindness to furnish the Bureau of Animal Industry with a tube of each kind of vaccine prepared by M. Pasteur for swine disease. We suppose that this was from the same lot as that which was sent to Dr. Gerth, and it would seem that the objection brought against Dr. Gerth's experiment in regard to the period which had elapsed between the preparation and use of the virus would not apply in our case, at least not with the same force. We received the first vaccine October 16 and used it the same day; consequently if this had been prepared about September 25 it would only be three weeks old at that time.

The first vaccine when it reached us still had considerable activity. It killed two mice out of three that were inoculated with it.

Four pigs were vaccinated; two of these had five drops each and the two others about thirty drops each. Strangely enough, the two which had only received a dose of five drops died, while the two others showed no signs of being affected by the virus.

The second vaccine was received by us October 23, but as sufficient time had not elapsed since the first vaccination the tube was kept in a cool place unopened until October 28, when the second vaccination was made.

I would explain here for the benefit of those who have not followed Pasteur's investigations that two vaccines are prepared and both are used upon each animal. One of these is supposed

to be stronger than the other. The first, or weaker vaccine, is designed to give a partial immunity from the disease, and enables the pig to resist the second or stronger vaccine, which would be dangerous to the life of the animal if used before the protective influence of the first vaccine has been acquired. The second vaccine, while not quite so strong as the unmitigated virus of the disease, is near enough to this strength to increase the degree of immunity to such an extent as to enable the animal to resist the very strongest virus of the plague. In other words, this is the theory of Pasteur's vaccine, but we shall soon see that the theory has some exceptions in practice.

In this case the second vaccine did not appear to be as strong as the first; the germs did not grow so well in culture liquids, and they were less deadly to mice. The three pigs remaining from the first vaccination were given a dose of two and a half drops each, which is the dose prescribed by Pasteur. In addition to these two other pigs were given about thirty drops each, our object being to produce the disease if possible, that it might be compared to the American swine plague. None of these animals, however, showed any signs of being affected even to the slightest degree by this vaccination.

The next point was to expose these vaccinated pigs to our American swine plague and learn if they had acquired the power to resist its contagion. Accordingly, one week after the second vaccination, the five pigs which had been operated upon were penned with two others that were taken from a herd affected with swine plague and that were undoubtedly sick with this affection. As a result of this exposure three of the five contracted the disease and died from very acute attacks. It seems evident, therefore, that the Pasteur vaccine cannot be relied upon as a preventive of our hog cholera. To this extent our conclusion coincides with that reached from the Nebraska experiments.

In another communication I will attempt to give the reason for this and hope to be able to show that the experiments that have been made by the Department of Agriculture have added considerably to our knowledge of the destructive malady popularly called hog cholera.

MORE ABOUT OUR ARMY VETERINARIANS.

Remarks by DR. WM. HERBERT LOWE, of Paterson, N. J., State Veterinary Inspector.

Gentlemen of the Veterinary Medical Association of New Jersey:

In view of some correspondence I have had as Secretary of the society, I am desirous of asking your attention to a subject which I trust you will deem of sufficient importance for consideration.

The leading editorial in a recent number of the AMERICAN VETERINARY REVIEW (presumably by Professor Liautard), is entitled: "Army Veterinarians." That article, and some correspondence with which I have been favored by a member of the Royal College of Veterinary Surgeons who is now in the service of the United States forces, have directed my attention to the present status of our army veterinarians.

It appears that their standing, professionally and socially, is a strange contrast to that of veterinary surgeons in the leading countries of Europe, where they hold the rank of commissioned officers, and enjoy such social relations as are usually accorded to professional men who respect themselves. Army veterinarians in our own service show an anomalous condition of affairs, which naturally awakens inquiry, not alone regarding their standing and numbers, but also concerning the treatment which cavalry horses and other animals receive in the service.

If I am correctly informed, the British War Department employs about two hundred veterinarians for thirteen thousand animals, whereas the U. S. War Department employs only about sixteen veterinarians for over fifteen thousand animals. What, therefore, must be the loss of property for want of proper treatment? And how much is the efficiency of the force lessened as a consequence? It may be said that troop horse-shoers and farriers are detailed for such services, but their materia medica and surgical qualifications need hardly be discussed on this occasion. Though, according to Act of Congress, "each cavalry regiment shall have one veterinary surgeon," it is said that the 4th Cavalry, owing to personal whims, has been without a veterinarian for some years.

As a consequence of the present not merely defective but wretched system, large numbers of unsound animals, unfit for service, are annually purchased without regard to proper veterinary examination. The mortality is, therefore, large, and the yearly list of the condemned is necessarily long. No other civilized army presents so high a death rate as ours, which calls for a yearly appropriation of nearly a quarter million of dollars. On one occasion an outbreak of glanders, for want of proper precautionary measures, caused the sacrifice of several human lives and a money loss of property estimated at about fifty thousand dollars.

Turf, Field and Farm, in a recent issue, says:

“Outbreaks of glanders alone during the late war frequently rendered a whole regiment of cavalry temporarily useless until a new supply of horses could be forwarded to the front and broken to their new work, and when the war ended the country became flooded with glanders through contact with army horses bought by farmers, and which had received no intelligent veterinary attention, and hence were impregnated with a contagious disease that was readily disseminated through the country. We well remember during the war seeing many cases standing tied to the picket-line and with a good horse on either side, in advanced stages of the malady, and no one apparently knowing or caring anything about it. This circumstance alone was undoubtedly the cause of the spread of the disease, and there is no doubt the same condition exists in the army to-day. There is but one way to overcome this difficulty and save a great and unnecessary loss to our Government and that is to raise the status of veterinary surgeons in the army to the rank, say, of the commissioned line officer. This alone is the only step required to induce educated veterinarians to enter the Government service, administer to the ailments of the horses, see that animals already impregnated with disease are not palmed off on the departments as sound, prevent the spread of disease, and thus in the end save their salaries to the Government many times over.”

With no adequate or competent veterinary corps how can so vast a number of animals as belong to the service be in any other than a deplorable condition, and yet no encouragement is given

qualified veterinary surgeons, either as regards rank or reward, or scientific services. If, however, the Government will not think its horses, that is no reason why veterinarians should not think themselves, and, so far as they are concerned, what is the remedy? It is, I think, proper to say that in the present condition of affairs graduated veterinarians should not remain or take position in the service where they are paid hardly enough to live, and have but a poor prospect of promotion or pension for services or injuries to which their profession renders them so liable. Happily there is plenty of professional work outside of the army, so that the veterinary surgeon can do better without the army, than the army can do without him. Surely, the animals of our cities, great and small, and the flocks and herds which range our vast domain, demand, and will continue to afford at paying prices, plenty of work for competent veterinary surgeons. But the time is not distant when army veterinarians will be satisfactorily recognised and rewarded. This will as surely follow the present condition of affairs, as that rivers flow down to the sea.

It is not necessary to survey here the extended fields of research necessary to fit the veterinary practitioner for the active duties of his profession. All of you, gentlemen, are quite familiar with this, and also know that inadequate services only can be rendered when there is want of proper study and practical experience. But it is well to keep the fact in view that what costs so much time and labor, and has so extensive an application for economic and humane purposes, is worthy of recognition and reward. The necessary knowledge is not to be picked up along the roadsides, nor is it to be found in battle fields where, as things are now, the poor wounded war horse, with little or no care, so often struggles in anguish "through the last dark passages of existence, without either the pride of the soldier, the reason of the philosopher, or the hope of the Christian—that is evil, pure and unmixed!"

One word more as to the social status of the veterinarian. I venture to prophesy that ere long he will in our army, as in the armies of England, France, Germany, Russia, Italy, Sweden, etc., rank as a commissioned officer, the grade probably varying, as in

Europe, from lieutenant to colonel. Already in other departments of our Government service, it is but just to say, the veterinarian has rank and reward, as instanced by veterinary officials in the Bureau of Animal Industry, and the State Inspectors and their assistants.

But aside from titles, which are coming, real rank, in the army as in civil life, will be what each one makes for himself. The world is familiar enough with the title horse-doctor in the *odious* sense, but it was well earned. It is our aim to let the world know what it is in the *scientific* sense. Much has already been accomplished. Nor has the world, all things considered, been slow in its acknowledgments or miserly in its rewards.

Most of the complaints made against the world, in the professions, as in other pursuits, are unjust. Men of merit may neglect the world, but the world seldom neglects men of merit, in any business or profession, unless it be their own fault. The world has certainly awarded to the shining lights of comparative medicine and surgery all the distinction that heart could wish for, as shown by Bouley, Chauveau, Fleming, and hosts of others whose names are familiar to us.

AMERICAN VETERINARY COLLEGE. HOSPITAL RECORDS.

By JAMES A. WALRATH, D.V.S., House Surgeon.

CEREBRAL INOCULATION AS A MEANS OF DIAGNOSIS IN THE POST MORTEM OF RABID ANIMALS.

A note was received by Dr. Liautard, on the 14th of April, from Dr. L. D. Buckley, of this city, informing him of a case of much interest, and requesting his counsel and co-operation. A dog had bitten a Miss M——, also biting other dogs, and had been killed, a careful post mortem examination following. Dr. L.'s expert judgment and his immediate attention to the case were urgently solicited. The body of the dog was received at the American Veterinary College the same day, and the result of the inspection which followed disclosed the following serious lesions:

There was congestion of the fauces; the stomach and intestinal tract were empty, with slight congestion of the former, which contained a single large bird feather; the kidneys were somewhat congested, and the bladder was *empty and retracted*, and also somewhat congested. These appearances were considered to be sufficient, taken in connection with the history of the case, to justify a diagnosis of rabies, and a report to that effect was made Dr. Buckley. But, while it was urgently recommended by Dr. that the injured lady should be taken to Paris, in order to place herself under the treatment of Pasteur, with the least possible delay, it was thought to be expedient, in view of the present advanced condition of medical science, to institute a further test, as confirmatory or otherwise, of the diagnosis which had been already reached. For this purpose it was proposed to resort to Pasteur's method of cerebral inoculation, and the following notes will inform the reader with what results the suggestion was carried into effect.

A living dog had been provided for the experiment (the brain and medulla oblongata of the dead animal having been carefully preserved), and, being placed under complete anesthesia, on the morning of the 15th, the observations commenced.

The cranium was trephined, a little on one side of the median line, the dura mater was carefully divided, and a small portion of the medulla of the first dog placed over the cerebrum of the second. The edges were brought together with sutures, protected with padding and collodion, and the animal placed in a secured kennel for observation. He recovered well from the anesthesia, ate well, slept well, and the wound healed slowly, with no appearance of anything abnormal in his condition, until the 30th of April. He then seemed to become more than usually affectionate towards the house surgeon who had his case under observation, and to those who had the care of him, and was very quiet generally.

On the following day, the 1st of May, and the sixteenth from that of inoculation, the first symptom of *dumb rabies*, viz., paralysis of the lower jaw, appeared. The mouth was slightly open, the jaw hung down, and there was an abundant flow of saliva. His manner was still very affectionate.

May 2d, the paralysis of the lower jaw had increased, the poor animal had become very feeble and tottering in his gait, and symptoms of paraplegia began to be manifest. His sleep seemed to be disturbed; his tongue partly hung from his mouth; he showed no tendency to bite, and was probably unable to do so.

The diagnosis which had been formed from the autopsy of the first dog was now confirmed, and it was reaffirmed decisively by that of the second—the poor victim having succumbed on the night of the 3d–4th.

May 4th, the autopsy was made, and the following lesions discovered. The pharynx was highly congested, and contained considerable foreign matter, such as hay and straw. The stomach was in a similarly congested state, and contained matters similar to those found in the pharynx, and a small filaria besides. The intestines were empty, and the bladder empty and firmly retracted in the pelvic cavity.

The bitten young lady had left New York for Paris on the 22d of April, and as she could scarcely be expected to reach Paris sooner than the 2d or 3d of May, she had no time to lose before placing herself under the care of M. Pasteur. Accordingly, on the 3d of May, at the earliest day when the experiment with the second day had become conclusive, as to its demonstrative results, M. Pasteur was notified of the facts by Dr. Liautard, to which he received a reply, on the 2th, conveying the gratifying intelligence that the patient had already received her third inoculation two days previous, or on the same day when Dr. L. had forwarded his last despatch.

PARALYSIS OF THE THROAT—ABSCESS AT THE BASE OF THE CRANIUM AND IN THE LEFT GUTTURAL POUCHES.

BY THE SAME.

The subject of the following article, a grey gelding, was admitted to the hospital on the 22d of March, suffering with paralysis of the pharynx. He had been seen and treated for the above disease several days previous to his admission, when it was thought advisable to have him brought here and put under treatment.

The history of the case is about as follows. For several weeks had been noticed to be out of condition, eating well but still coming to grow poor. When, one afternoon, on being taken out drive, the owner, in ascending a slight eminence, noticed the animal roar some, and seemed to be unusually fatigued.

On returning, a veterinarian was called in, who gave the animal purge, making it out a case of "intestinal irritation." The animal purged freely for some thirty-six hours, and at the end of this time became so weak as to be hardly able to stand, refusing food and being unable to swallow, except after repeated attempts. Saliva now began running from the mouth, being of a frothy, frothy character, and flowing out in large quantities. It was about this time that he came to the attention of the college, and was put under electuaries of belladonna, and had a cantharides ointment thoroughly rubbed around the neck.

Upon being brought to the hospital, an examination was made of the pharynx, the mucous membrane of which was found to be inflamed, and with but little reflex action when touched with the tongue. Electricity was now applied to the region of the throat, by the poles of a galvano-electric battery, one being held on either side and slowly passed up and down, causing a direct current to pass through the affected structures, evinced by the animal's repeated attempt at swallowing. This was kept up for about twenty minutes, and gone through with three times a day. Strychnia was now given in two grain doses three times a day. For the first day so the a slight improvement seemed to take place, the animal drinking about two quarts of milk per day, but would eat no oats or hay. The electricity was then increased to half an hour, but the animal seemed to be at a standstill and gradually became worse. The strychnia was also increased to two and one-half grains three times a day, and finally to three grains, and the electricity discontinued. This was kept up until symptoms of strychnia poisoning were observed, when it was cut down to a grain and a half, in combination with the same quantity of nitrate of silver; but without any good results, the animal gradually growing weaker, as he refused all nourishment, until April 3d, when he died.

Upon post mortem examination, the pharynx was found full of

mucosities and highly congested. The left guttural pouches had their walls considerably thickened and somewhat retracted, and contained a small quantity of inspissated pus, scarcely an ounce. This seemed to communicate with a smaller purulent collection situated directly under the foramen lacerum. The glosso-pharyngeal nerve of that side was thickened, congested and the nervous substance appeared softened and degenerated. It is now prepared for microscopic examination, and its condition will be reported later on.

When taking into consideration the location of the abscess and the lesion of the nerve, the paralysis of the pharynx can be readily understood, while, at the same time, the small size of collection and its deep situation at the base of the cranium, must necessarily exclude the possibility of its puncture per mouth, as recommended by some veterinary authorities.

LACERATION AT THE METATARSAL REGION—NECROSIS AND SLOUGHING OF A LARGE PIECE OF BONE.

BY THE SAME.

A green horse, becoming frightened at the elevated railroad, ran away, and in turning a corner got his near hind leg into the opening of a sewer and was brought to the college with a wound of the anterior metatarsal region, about eight inches in length, and laying bare the bone, and denuding it of its periosteum. Not much hæmorrhage took place, but there was a loss of some tissue. The flap of skin was stitched up and cold water bandages applied. It immediately commenced to slough, granulations springing up which were controlled by pressure and caustics. After some three weeks the wound had partially closed, but leaving a wide fistulous tract leading to the bone, through which a probe came in contact with the roughened and diseased scale of bone corresponding to that portion from which the periosteum had been removed. It was gradually becoming loosened, but the scale was so large that its removal was postponed until the twenty-fourth day after the accident, when the scale was seized with a pair of tooth forceps and removed. It was still firmly attached and was withdrawn

er much trouble and by using considerable force. Quite a severe hemorrhage took place after the operation, but was easily controlled by cold water bandages and pressure.

The fistulous tract immediately began to close up, and in one week no trace of it could be found. The granulations are yet quite prominent, but are decreasing in size. The animal was discharged several days since, but is still brought back for dressing. The piece of bone removed was about six inches long and one in width, and was taken out in two pieces.

EXTRACTS FROM FOREIGN JOURNALS.

ON IMPERFORATION OF THE POSTERIOR MEDIASTINUM AND THE DISTINCT INDEPENDENCE OF THE TWO PLEURAL SACS IN THE HORSE—PRACTICAL CONCLUSION.

A paper read before the Societie Centrale de Médecine Veterinaire, by
M. BARRIER.

Allow me to occupy your attention upon a disposition of the posterior mediastinum of the horse, not mentioned in our class-works on veterinary anatomy. I refer to the fact of the perforate formation of that system, and of the distinct separation between the two pleural sacs.

It is known that on the cadaver, the posterior mediastinum is usually appears covered, more or less, with little openings, which seem to establish a communication between the two pleural cavities. These openings are sometimes seen also on the anterior, but certainly are these less numerous than in the posterior mediastinum. Our views on this subject are so frequently proved by dissections and clinical observations, that every veterinarian accepts them as the expression of a normal condition, and believes in the conclusion of double pleuritic exudation is the proper natural consequence of it.

But in truth, these affirmations are quite too absolute. If the perforation of the median septum is apparently the *rule*, it is not an invariable law, but is subject to a great many exceptions. I thought proper to call your attention to this physiological

fact, from which the clinic may derive much profit, and shall depend for my statements upon dissections, histological observations and a few experimental facts, to all of which I shall refer.

1st, DISSECTIONS.—(a) When the abdominal cavity of a horse is opened for examination of the condition of the posterior face of the diaphragm, this is seen, very depressible, powerfully stretched, and pushed forward by atmospheric pressure. Every one knows that in these conditions the external face of the lung rests directly upon the internal face of the ribs. But if, by an opening through any of the inter-costal spaces, air is allowed to enter the chest, the pressure being then equal upon both surfaces of the lungs, this organ shrinks down by reason of its elasticity, and the diaphragm, at first concave backwards, becomes at once flabby and soft, in consequence of the equality of the pressure on both surfaces.

The same procedure with the ox, or any other of our domestic animals, gives different results. But half of the diaphragm shrinks down, being that of the side on which the chest has been opened. And this is the case because the two pleural sacs remain independent; because the mediastinum is not perforated.

For years I have observed, in the horse, the same phenomena viz.: the flabby condition of one side only of the diaphragm, after the consecutive opening of the abdominal and then of the thoracic cavities. How can we explain this fact, unless by admitting that the mediastinum is not perforated in the subjects where I have observed it?

(b) Very thin and delicate in its normal condition, the mediastinic septum is, in most cases, much exposed to be torn under the influence of an accidental mechanical cause, however slight in appearance.

This is easily demonstrated when, as in the experiment before mentioned, air is allowed to enter slowly one of the pleural sacs through a facettèd tube. In this case the unilateral slacking of the diaphragm will be obtained with so much more facility according as the facette will have been slowly opened. *A fortiori*, this will fail every time the thorax is opened widely by the sudden removal of several ribs.

(c) I have observed some eight or ten times, and always by chance, the thickness, resistance and complete imperforation of the mediastinum upon cadavers in which not the slightest care had been taken to prevent the laceration of the mediastinum. In these horses, the mediastinum had, without exaggeration, the characters of solidity and of homogeneity equal to those of the mesentery itself.

(d) In observing attentively the posterior mediastinum upon the cadaver, after making a large opening in the thorax, on the same side, and after raising the lung to expose it, the openings of the mediastinum are seen increasing more and more in size and in numbers, and after a short time the membranes will have the appearance of a delicate piece of lace; something very different from that which it first presented. These successive lacerations are due to the abnormal tractions put on the septum under the influence of the flabby condition of the lung, and the relaxation of the diaphragm after the opening of the thorax.

This fact leaves no doubt as to the true nature of the mediastinic perforations described by authors as constituting their normal condition. Is it not sufficient to prove their purely accidental character?

(e) But, it is easy to observe *de visu*, the formation of these perforations. For this purpose let the two pleural sacs be opened simultaneously and with great care, by tubes with facettes, previously secured in the upper part of an intercostal space, similar on both sides, and then allow the air to enter very slowly, and *very often* the mediastinum will be preserved intact. Then observe carefully and with a magnifying lens the serous surface. At first very small openings will be observed, but these will by degrees increase. Evidently the success of this experiment will vary according to the delicate condition of the membrane. Indeed, in some instances, this is so much the case that the perforations are already formed, when the lung is raised to expose it.

2d, HISTOLOGICAL EXAMINATIONS.—What has just been observed with the magnifying lens is confirmed by microscopical examination in a very positive manner.

The mediastinum being carefully exposed from both sides of

the chest, let a glass slide be laid against it. On account of its natural moisture, the membrane soon adheres to the glass while still retaining its normal and physiological condition, provided no excess of pressure has been put on it. Let the membrane then be carefully divided so that a fragment of it shall be isolated upon the glass, and colored with a few drops of picrocarminate of ammonia solution, and the following results will be observed:

1st, A fibrous network, formed of connective fasciculi, of various sizes and of very fine elastic fibres. The connective fasciculi are intercrossed in all directions, but in the same plane. They thus represent numerous very uneven networks of handsome appearance. The smallest of these are bound by very delicate threads, in the centre of which no capillary vessels can be found: a condition which explains their great fragility.

2d, A layer of endothelial cells, polygonal by reciprocal pressure, upon each of the faces of the serous membrane. The examination of this endothelium can be made directly in the picro-carminate after a few hours, but is better observed in nitrate of silver solution.

That which is interesting to us is, that in the centre of the largest network the two layers of endothelium only are to be found; there is no connective tissue between them. It is at these points that the serous surface is most delicate and liable to tear.

When the preparation has succeeded, the membrane presents only very few holes, and sometimes none can be seen. But when they do appear, they present special characters. The endothelium appears in them with evidently torn edges, which are formed of cells which have assumed the circular form, in the parts where they are free; but have a polygonal form when they adhere to surrounding cells.

In tearing, the endothelial covering retracts. It shrinks towards the vascular tracts of the membrane, where it is most supported, and as a consequence a certain number of the finest trabeculæ are exposed.

Whether the openings have been artificially formed during the

manipulations of the preparation; whether they were natural, or existing *previous* to the manipulations for the histological examination—they always have the same characters, viz., they are *endothelial lacerations*, and not *natural* openings, such as those which are observed in the great omentum.

In this last serous surface, the endothelium shows no separation, howsoever fine it may be. It is continuous with itself all over; its cells are polygonal all over, and present circular edges everywhere.

From these facts I am brought to the conclusion that the openings of the posterior mediastinum are of recent existence, and probably are generally *artificial*. However, as those histological examinations are only limited, I am not prepared to deny any other explanation of their formation.

3d, EXPERIMENTS ON THE LIVING ANIMAL.—I have several times tried to demonstrate by experiments the distinct separation of the two pleural sacs, but I have succeeded only once. The other trials have for various reasons failed.

On the 17th of February, 1884, I marked with a pair of scissors, upon an old subject for desecation, the curve of inferior dullness of the chest, on both sides of that region. Five liters of distilled water, at a temperature of $+ 30$ degrees, were then, very slowly and with the greatest care, injected into the left pleural sac. During the injection, the subject was kept quiet, and struggled very little. After the injection, percussion was made on both sides of the chest. On the left side, the line of dullness was raised eight centimetres; curved at first, it had become horizontal. On the right side the level dullness remained the same. The injected liquid then remained in the left pleural sac. This condition lasted a little more than *an hour*.

After a short time the animal was moved in order to see whether, under the influence of the injection the rupture of the mediastinum had taken place. Percussion on both sides of the chest showed; the *left*, a lowering of the horizontal line of dullness, three centimetres. It still remained horizontal. On the *right* side the original curve was the same, auscultation on that side giving the respiratory murmur, while it was absent on the other.

Supposing that the mediastinum had been torn during the exercise, and that the liquid was passing from the left to the right sac this side was again percussed, when a notable elevation of the line of dullness was detected, and an horizontal direction observed, as in the left side. On this, the dullness had lowered two centimetres more, while on the other it had risen until it had reached the level of the left.

The next day, the animal was killed, and examination revealed all the lesions of acute pleurisy, with a thick layer of false membrane upon the lungs. The pleural effusion, of which there was nine liters, was of a reddish color. Examined with the microscope the mediastinum showed perforations resulting from the tearing of the mediastinum just as I have already described. From these facts I believe I am authorized to adopt the following conclusion.

1st, The posterior mediastinum of the horse is a membrane absolutely unperforated, in some cases, during life and after death.

2d, This membrane is generally very delicate, and consequently exposed to be torn, both during life and after death, under the influence of the slightest cause.

3d, Perforations have the character of recent endothelial lacerations, and not that of natural foramina, analagous to those of the great omentum.

4th, The openings found post mortem, as evidence of the normal condition, are probably only partial lacerations, produced accidentally through the manipulation of dissection.

5th, There may exist in horses, *unilateral* pleuritic inflammatory exudation, *temporary*, when the septum is delicate; permanent when it is resisting.

6th, At the onset, pleurisy must be very difficult, if not impossible to detect by percussion, for the reason that it is probably always, then, unilateral, and that the effusion cannot be detected until the collection has passed the line of inferior dullness of the chest.

7th, If the normal fragility of the mediastinum explains the ordinary duality of pleurisy in horses, it does not disprove its unity in the beginning of the disease.—*Bull. Mem. Soc. Cent. d. Med. Vet.*

FRACTURE OF THE THIRD CERVICAL VERTEBRA.

BY J. A. NUNN, A.V.D.

The patient, a country bred mare, was admitted into the hospital of the Lahore Veterinary School, on May 24th, 1885, at about 3:30 p.m., suffering from what was described by the owner as an injury to the neck. The animal had been fastened up by a chain, one end of which was attached to a large log of wood, the other to one of the fore fetlocks. She was frightened at something, ran back, and jerked the log into the air, and it, on falling back struck the neck, causing the injury; this was done about 1:30 p.m. When seen there was a slight loss of power in all four limbs, which were straddled apart, the animal moving with a swinging gait and staggering as if there was a difficulty in maintaining the balance. The neck could be moved with tolerable freedom, but was kept turned to the left; on the right a tumor about 6 inches in diameter could be felt extended over the region of the third vertebra. On my attempting to examine the part, the patient plunged violently and fell over on the right side, but arose again without assistance. This was repeated twice, but after the third time she remained down until she died, appearing partly paralyzed and insensible to pain. The off hind leg, the undermost one, was moved spasmodically from time to time, and sensation was much less on the near than the off side. The pupils contracted and expanded to light, the respirations and pulse were normal, and the appetite remained up till the last, but only a very small quantity of urine or fœces were passed when the patient first fell down. She died at 5 p.m., on the 25th idem, without a struggle, about twenty-six hours after the accident. On examination, the third cervical vertebra was found to be fractured into a large and an infinite number of smaller pieces, some of which were almost in a state of powder. The spinal cord was uninjured but enveloped in a clot of blood inside and outside the theca, which was ruptured opposite the injury. The whole of the vessels of the brain were much engorged with dark blood, and at the base there was a small quantity of dark-colored serum. The fracture was not displaced except the transverse process on the

near side, which was detached from the body of the bone and displaced outwards. The most curious feature of this case appears to be the length of time the animal remained alive after the injury was inflicted.—(*Quarterly of Veterinary Science in India.*

FATTY TUMOR ON THE PENIS OF A DONKEY.

BY THE SAME.

The patient was a Government Italian donkey stallion, and had been out during the covering season in a very remote district of the Punjab. The history of the case appears to be that a small ulcer formed on the dorsum of the penis "probably aggravated by dirt," and had been treated by a native salootrie. What the nature of this treatment was is unknown, but I think some irritant dressing, in which oil of turpentine was one of the chief ingredients, was used. This happened some time in the beginning of April, and the animal was sent in to the Lahore Veterinary School for treatment on the 2d of May. The donkey was then in good condition, the penis was pendulous, hanging out from the sheath as if drawn down by the weight of the tumor, which was the size of a tennis ball and situated on the dorsum surface at the base of the glans, on which and at the opening of the urethral canal were several small pitted ulcers with rounded pale colored edges. The tumor was operated on May 8th, being first secured by acupuncture with a seton needle, and then removed by a longitudinal incision. It was distinctly fatty in nature and there was little or no hemorrhage. There was a considerable amount of œdema and swelling. The whole of the organ was supported in a sling till the 24th. The case did well, the ulcer on the glans and the wound caused by the removal of the tumor healed up, and the penis regained its natural flaccid condition. As far as my experience goes, donkey stallions especially are liable to these fatty tumors on the penis. I have seen three other cases in Spanish and Italian donkeys used by the Government in India for mule breeding, but that I have just described is the only one of which I have any notes.—(*Quarterly of Veterinary Science in India.*)

PATHOLOGICAL ANATOMY.

PARASITIC NATURE OF MELANOSIS AND OF SOME MELANOTIC TUMORS.

BY L. BARD.

Clinical facts can be cited in favor of this parasitic origin—a primitive focus externally, at the extremity of a leg—localization and prolonged stationary condition—very rapid generalization.

From the point of view of the anatomo-pathological student, melanotic tumors may be divided into three groups. These are, firstly, cystic masses, where the tissues have all disappeared; secondly, simple circumscribed melanotic masses in the form of tumors; and thirdly, tumors of small size, with small granular melanotic centres.

This last variety is the type of the second growth, of recent formation, constituting the first steps towards melanotic development. The progressive advance of these alterations, the presence of fragmentary granulations around the centres of propagation, their accumulation, and continuous increase, as the lesion, during its progress through the economy shows itself—these anatomical facts suggest to the author the idea that the melanotic granules might be the pathogenic parasitic organism. It may not be a microbe, but one of those sporula organisms, the fungi of the actinomycosis kind, which would be the propagating agent of the disease.—*Revue des Sciences Medicales*.

UPON A MICROBE WHOSE PRESENCE SEEMED TO RELATE TO RABID VIRULENCY.

BY H. FOL.

By employing the method of Ehrlich and Weigert for hardening and coloring the sections, and using sections of one two-hundredth millimetres thickness, Mr. Fol has succeeded in finding in the marrow of rabid animals, elements which are not found in the healthy marrow. These are groups of small globules, resembling micrococci, lodged in the nevrogia, or in cavities having

the diameter of a myeline fibre. These spherical grains are arranged without marked order, and do not form chapelets.

In cultivating the rabid brain, these elements are found in the sediment of the cultures. And if this sediment is inoculated before the fifth day, it gives rise in some cases to rabies, but with an incubative stage of some length. After the sixth day the inoculation of the cultures remains negative.—*Ibid.*

EXPERIMENTAL PATHOLOGY.

UPON THE PRESENCE OF MICRO-ORGANISMS IN THE LIVING TISSUES OF HEALTHY ANIMALS.

BY M. HAUSER.

Mr. Hauser has made experiments as follows:

Healthy animals were destroyed by a violent blow on the poll. Then, observing strictest and most perfect antiseptic precaution, the operator would skin the animal while still warm, and remove with sharp instruments, heated by fire, pieces of flesh and of different organs. These anatomical specimens were then preserved in previously heated recipients, containing either air or gases which had been filtered through either wadding or water, or bouillons of culture previously sterilized. After remaining some time in these media, the pieces taken from the organs were taken out and examined for the possible presence of micro-organisms, the water and the liquids being similarly treated. The results led him to the following conclusions:

1st, In the liquids and tissues of healthy living animals there exist no germs either of putrefaction, or any other species of bacteria.

2d, When they are kept from contact with all schizomycetes, tissues of animal, preserved in air, in gases, such as oxygen, hydrogen or carbonic acid, or in water and bouillons, they undergo regressive changes, analogous to those observed in the tissues of the living body, when these are attacked with necrosis, consecutive to simple troubles of nutrition, and with any bacterial influence.

3d. The products of decomposition, resulting from the dissociation of tissues, in the above mentioned condition, are free from any pathogenic properties.—*Ibid.*

VETERINARY LEGISLATION.

AN ACT TO REGULATE THE PRACTICE OF VETERINARY MEDICINE AND SURGERY IN THE STATE OF NEW YORK.

The people of the State of New York, represented in Senate and Assembly, do enact as follows :

SECTION 1. No person shall practice veterinary medicine and surgery, or any branch thereof, as a profession in this State for compensation, or shall, either directly or indirectly, receive or accept for his services as a practitioner of veterinary medicine or surgery any fee or reward, except he be duly registered as hereinafter provided in the book for that purpose in the office of the Clerk of the county in which he resides.

§ 2. No person shall be entitled to register as such practitioner unless he be a graduate of a legally chartered or incorporated college or university, or shall hold a certificate of qualification from a legally incorporated veterinary society, organized at least one year before the passage of this act, and such certificate shall be issued at least one year previous to January 1, 1886, except as provided for in Section 3 of this act.

§ 3. Any person who has been practicing veterinary medicine and surgery in this State for a period of not less than three years preceding the passage of this act, without having obtained a diploma or certificate from a legally chartered or incorporated veterinary college, university or society, as provided for in Section 2 of this act, must register within six months after the passage of this act, upon making and filing with the Clerk of the county in which he resides an affidavit, stating that he has been so practicing veterinary medicine and surgery for the period hereinbefore prescribed.

§ 4. The County Clerk of each county shall provide a book to be known as the Veterinary Medical Register, in which shall be recorded the names of the registrant, the name of the college or university granting his diploma, or of the society granting his certificate; or should the applicant not present such diploma or certificate, then the Clerk shall file the affidavit prescribed in Sec-

tion 3 of this act, after which such applicant must register in like manner as if he had presented a diploma or certificate from a veterinary college, university or society, and shall then be entitled to continue the practice of veterinary medicine and surgery. Every applicant who shall have complied with the foregoing provisions, and shall be admitted to registration, shall pay to the Clerk of said county the sum of \$2, which shall be received in full compensation for such registration.

§ 5. Any person who shall present to the Clerk for the purpose of registration any diploma or certificate which has been fraudulently obtained, or shall practice veterinary medicine and surgery without conforming to the requirements of this act, or shall otherwise violate or neglect to comply with any of the provisions of this act, shall be guilty of a misdemeanor, and shall, for each and every offence, be punished by a fine of not less than \$50 nor more than \$250, or by imprisonment in the county jail for a term of not less than ninety days nor more than two years, or by fine and imprisonment. But nothing in this bill shall be construed to prohibit students from prescribing under the supervision of preceptors, or to prohibit gratuitous services in case of an emergency, or to prohibit the services of an authorized practitioner of a neighboring State when incidentally called into requisition.

§ 6. This act shall take effect immediately.

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY SOCIETY.

The regular monthly meeting of the New York State Veterinary Society was held on Tuesday, May 11th, 1886, in the lecture room of the American Veterinary College, the President, Dr. R. W. Finlay, in the chair.

A large number of members answered the roll call.

Minutes of last meeting were read, and on motion to adopt same, Dr. R. A. McLean took exception to the part which stated he had been appointed essayist for the meeting, claiming that it was not correct.

The Secretary said he had entered it on the minute book with the authority of the Chair, as the gentleman had promised to do so at a previous meeting.

The Chair explained when and how the promise was made. Dr. R. A. Finlay held with the chair, adding that he had promised at the same time to follow Dr. McLean with a paper.

On motion, that portion of the minutes naming Dr. R. A. McLean as essayist for the evening was struck out, and when so corrected, were ordered adopted.

The Chair then called upon Dr. R. A. McLean to read a paper, who replied that he was not ready to do so, and a call was then made for reports of committees.

Dr. R. A. McLean, Chairman of the Board of Censors, reported favorably on names of John Fay, V.S., Otto V. Lang, V.S., John C. Shifford, V.S., and John D. Donnelly, V.S., which was, on motion, received.

Dr. Pendry, Chairman of the Committee on Legislation, read a report stating that the work of the committee had been brought to a satisfactory issue. The bill had been passed in the Senate with only one opposing vote, after an amendment had been made in Section 3, by striking out the word "continuously" and the words "for a means of livelihood," which had been concurred in by the Assembly by seventy-eight votes, and read a telegram, received during the meeting, from Albany, stating the bill had just been signed and was then law. The report stating that the total expense of the committee, including printing, etc., was under sixty dollars, and asked that the committee be discharged.

On motion to receive report and discharge committee with thanks, Dr. R. A. McLean said he failed to see what the profession had gained by the passage of the bill, and contended that the profession was in a worse position now than before; the bill was not the same as that sent to Albany; he considered the present bill legalized every blacksmith and stableman in the State; he considered the Chairman had taken too much authority upon himself in having agreed to the amendments without the authority of the Society. He criticised the bill and committee at considerable length.

Dr. Field said he was sorry to see any member of the Society get up and throw cold water on the work of the committee, whom he considered had done well; while he was sorry that the last amendment had been obliged to be accepted, he considered they had done the very best that could be done, and deserved thanks instead of criticism; so far as Section 3 went, the whole of it would be wiped out in six months, and after that time only graduates could register.

On motion the bill as passed was read by the Secretary, when Drs. Delessor, C. Cattanaach, and the Chairman said they failed to see the bill in the light that Dr. R. A. McLean would have them see it; they could not see the disastrous effects that gentleman had tried to make out.

Dr. R. A. Finlay stated the Society had been fully informed by reports of the committees at previous meetings, of the changes made, and no objection was made; notice, too, had been given that there was a desire at Albany to make the same change.

Dr. L. McLean moved, seconded by Dr. Cuff, that Section 3 of bill sent to Albany be read.

Dr. Birdsall said he hoped the motion would not be carried; he saw no object to be gained; he considered the committee had done nobly.

The motion was put and resulted in a tie vote.

The President said he saw no good could result in having Section 3 of the last draft of bill read or in opening up a further discussion. He considered the committee had done well, a great deal of work had been done with remarkably little expenditure; considered that the better man would always find his place,

and ought to have nothing to fear; was well satisfied with the result of the committee, and considered a large amount of credit was due Dr. Pendry for the work he had done, and should cast his vote against the motion.

Dr. Pendry said he wished to reply to-day to what he considered a personal attack, due to what, he did not know, unless it was that the gentleman was afraid that it would be a personal loss to him to have a few of the outsiders legalized. Some people looked no further than that; it was the thought that first, last, and always uppermost in their mind. He considered a good practitioner need have no fear. His idea of legislation had been for the benefit of the profession, not for himself; it could not be expected, neither could it be good law that would give immediate benefit; he had looked further ahead than would appear some people had been willing to do; and contended that the important point had been reached, when he had succeeded in getting our profession reorganized and legalized as a profession. Section 3 of the bill, after all, really did not amount to anything; six months would soon run around, and we would know exactly who we had in the profession, and as licensed members dropped off, they could only be replaced by regular graduate members of the profession. As to the section about students, he could not see in the light the gentleman contended. As to the charge that he had assumed too much, he denied it in the sense that was made; the only thing he had assumed was the work, which he had been ready to do. If any blame was attached to the committee, then he was willing to assume the whole of that. It was perfectly true that when the amendment was made, he had kept it somewhat to himself, because some members of the profession were so selfish that he was afraid to trust them. There was one thing that he could be held to account for, and that was, that perhaps, he had been willing to accept an amendment exempting four counties from the provisions of the bill, the last words struck out might have been left in; his cry had been, a law for the whole State or none at all. If he had acted unwisely, then the Society could show its disapproval in a proper manner; but he hoped they would believe one thing, and that was, that whatever he had done, had been done with only one motive, which was to raise the veterinary profession in this State to some plane, where the law and the people would be obliged to recognize it, and this he contended the bill as passed did.

The report of the committee was then on motion, received and accepted with a vote of thanks.

On motion of Dr. J. S. Cattanach, a special vote of thanks was tendered to Dr. Pendry for his exertions and services on behalf of the bill, who acknowledged the same, and said he had never expected to be able to please every member of the Society, but he had expected to satisfy the most of them, and it was pleasing to see that this idea was not a delusion, by the way the motion was carried.

On motion, a special vote of thanks was passed to the Hon. John P. Windolph, as also a vote of thanks to the Hons. Jacob Contor, Ed. F. Fagan, James W. Hoysradt and Ed. Wemple.

The following motion was then carried: That a committee of three be appointed by the Chair, to confer with the committee of three appointed by the New York County Veterinary Medical Society, to arrange a testimonial dinner to be tendered to the Hon. John P. Windolph and friends of the bill. Dr. Field, Dixon and Cuff were appointed as such committee.

The following gentlemen were then duly elected members of the Society: John Foy, V.S., New York; John T. D. Donnelly, V.S., Astoria, N. Y.; John Shifford, V.S., New York; and Otto V. Lang, V.S., Brooklyn.

A letter was read from Dr. Pendry, tendering his resignation as Secretary and Treasurer of the Society, which was, on motion, laid on the table.

After some interesting pathological specimens were exhibited by Dr. L. Lean, which resulted in a general discussion, the meeting adjourned.

MASSACHUSETTS VETERINARY ASSOCIATION.

The third annual meeting of the Massachusetts Veterinary Association was held at Young's Hotel, Boston, Wednesday evening, April 28th, 1886.

Vice-President John S. Saunders presided, and there were present Doctors Bryden, Blackwood, Howard, Peters and Skully of Boston, Cosgrove of Worcester, Osgood of Springfield, Sherman of Lowell, and Winchester of Lawrence.

The minutes of previous meeting were read and accepted, also reports of committees on charter, and revision of the constitution and by-laws.

The annual report of the Secretary was next listened to, which was a summary of the doings of the Association for the year just closing. He said there had been held during the year thirteen meetings at which there had been an average attendance of ten members, which was an indication of the unflagging interest taken in the work of the Association. He called attention to the number of papers read on a variety of subjects, and the discussions which in every case followed them. That all had been interested and instructed thereby went without saying. He also mentioned the large number of interesting pathological specimens exhibited, and said that much of the general enjoyment of the meetings had been due to the recital of the experience of the members in their private professional practice.

The meeting then proceeded to the election of officers for the ensuing year. A committee on nominations, consisting of Doctors Peters, Sherman and Cosgrove, was appointed by the Chair. They reported as follows: For President, H. Osgood, M.R.C.V.S., of Springfield; for First Vice-President, J. S. Saunders, D.V.S., of Boston; for Second Vice-President, J. M. Skully, V.S., of Boston; for Secretary and Treasurer, L. H. Howard, D.V.S., of Boston; Executive Committee—W. Bryden, V.S., of Boston; M. Bunker, D.V.S., of Newton; T. Blackwood, V.S., of Boston; J. F. Winchester, D.V.S., of Lawrence; G. P. Animant, D.V.S., of Worcester.

On motion of Dr. Skully the Secretary was instructed to cast the ballot of the Association for Dr. Osgood for President. The rest of the above ticket was elected by a unanimous vote.

Dr. Osgood assumed the chair, and in a short address thanked the members for the honor conferred upon him.

A letter of farewell was read from our ex-President, Dr. Billings, who has moved to Nebraska, assuring the Association of his continued interest in its affairs.

It was voted that the next meeting of the Association be held at Springfield, and it was announced that Dr. Liatard would be present and would read a paper on "H. Bouley and his life."

Dinner was announced, and the company adjourned to the banquet hall, where the next two hours were passed in consumption of the edibles and listening to after-dinner remarks, Dr. Bryden officiating as toastmaster in a very courteous manner.

Among the toasts drunk were the following: "The Massachusetts Veterinary Association," responded to by Dr. Howard; "Our President," by Dr. Osgood; "The Veterinary Colleges," by Doctors Sherman and Blackwood; "The U. S.

Veterinary Medical Association," by its Vice-President, Dr. Cosgrove; "Our Retiring Officers," by Dr. J. S. Saunders; "The Profession in Boston," by our guest, Dr. J. H. Stickney; "Agriculture," by Dr. Peters, of the Massachusetts Society for the Promotion of Agriculture, and Dr. Winchester, of the Massachusetts Cattle Commission; "Society," by its luminary, Dr. Bunker; "The Ladies," by their champion, Dr. Skally. Dr. Skally proposed a toast, "The Profession in Foreign Countries (Chelsea in particular)," which was responded to by "the foreigner," Dr. Bryden.

The company adjourned at a late hour.

L. H. HOWARD, Secretary.

CORRESPONDENCE.

AGRICULTURAL COLLEGE, HANOVER, N. H., }
Editor Review: May, 1886. }

DEAR SIR.—A case of early pregnancy in a full-blooded Jersey heifer recently came under my observation. The owner had not the exact date of the mother's birth, but from data which he did have was positive that she could not be more than 375 days old when the calf was born. He thought she was younger than that. The birth was easy, the offspring a healthy male and well formed. The calf was weighed in my presence about sixteen hours after birth and tipped the scales at fifty-two pounds. The sire was a full-blooded Durham about a year and a half old. Yours truly,

R. F. BURLEIGH, D.V.S.

OBITUARY.

We have to record the decease of the oldest practitioner of veterinary medicine in the city of Boston, namely, Dr. W. H. Lillyman, M.R.C.V.S.

Dr. Lillyman was born in London, England, Feb. 28, 1820, was apprenticed at the age of thirteen to a veterinary surgeon of London. Later he entered the veterinary college in the same city, graduating in 1840, at the age of twenty. He then went to Ireland, practicing his profession in the vicinity of Dublin for a few years, and came from there to America, landing here in 1846.

He soon established himself in practice at Boston, Mass., where he remained until his death, which occurred May 15, at the age of sixty-six years.

He was for thirteen years after his arrival at Boston the only graduated veterinarian in the city, and for nearly forty years has attended to a very extensive practice throughout New England.

He was a man noted for his independence of thought and originality of idea, and his profession was his idol. He enjoyed the reputation of being a skilful surgeon and successful practitioner.

AMERICAN

VETERINARY REVIEW.

EDITED AND PUBLISHED BY

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OF. R. S. HUIDEKOPER, M.D., V.S., D. J. DIXON, D.V.S., Hoboken,

AND OTHER VETERINARIANS.

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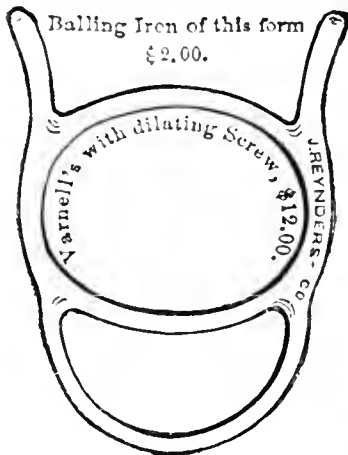
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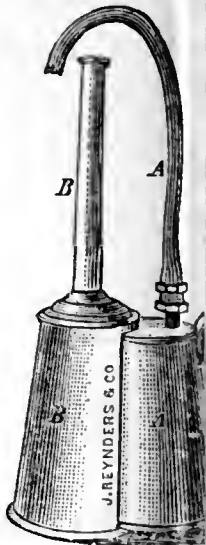
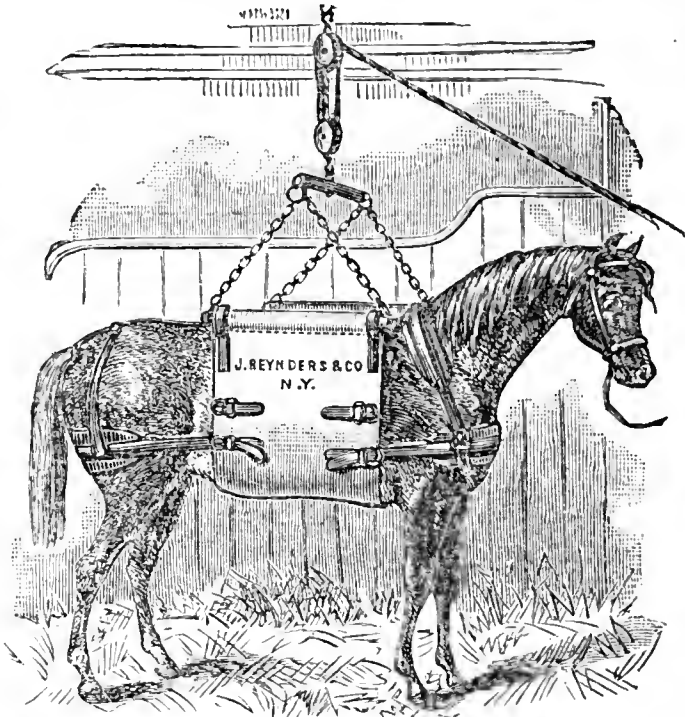
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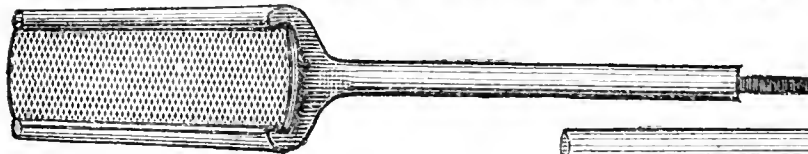
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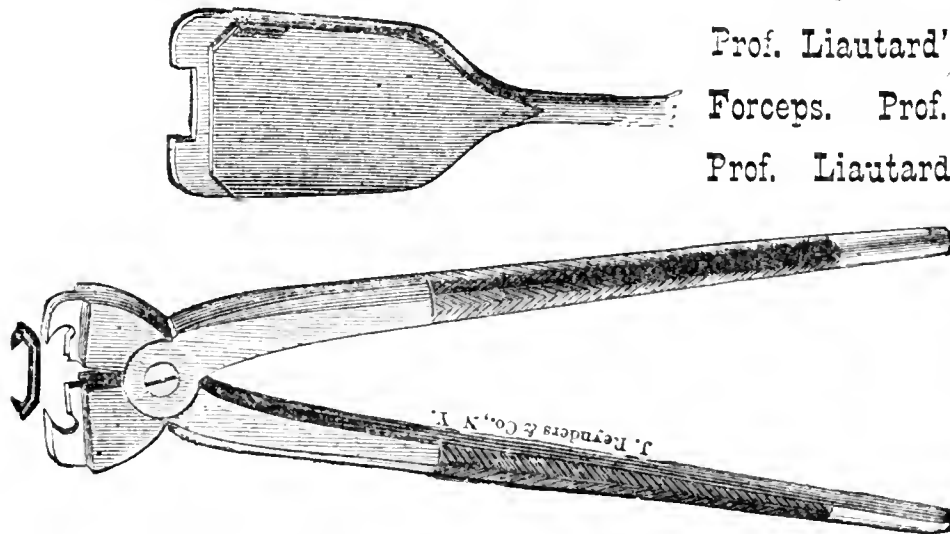
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AMERICAN VETERINARY REVIEW,

JULY, 1886.

EDITORIAL.

AMERICAN VETERINARY COLLEGE—its organization under the general law of the State of New York—clamors against the legality of the institution, and objections to its power to issue diplomas—an opinion of the Attorney General of the State applied for and given, which will probably tend to secure a degree of comparative future tranquility—the trial and decision in the case of the United States Medical College excites its jealous enemies—they dare not test its legal right to existence, but persevere in their attacks—the Alumni Association decide to test the case before a court of law—the trustees of the college, not satisfied with this, apply to the Legislature and a special act is passed reaffirming the past action of the college and recognizing its legal existence, with increased privileges. HOG CHOLERA—if not rouget, what is it—the theory of prophylaxy by vaccination—we had been led to recognize two diseases under one name—the failures in Nebraska and in the Bureau of Animal Industry—it is not the same disease, inasmuch as the vaccine of one is not available for the other—experiments with the vaccine of rouget may introduce a serious disease in the United States—though not rouget, is it schweineseuche—it should be investigated, but a vaccine may be looked for. GANGLIONAR LEUCOCYTHEMIA—an unusual case, the entire cutaneous lymphatic structure being affected—diagnosis established by the numeration of the white corpuscles—the first case recorded in the United States. NUMBER OF DEAD HORSES IN NEW YORK CITY—useful statistics from Dr. S. Field—importance of the subject. REPORTS OF VETERINARY SOCIETIES—their transactions more interesting and more valuable to American veterinarians than to any others—the REVIEW has always been ready to give their reports to the public—takes pleasure in receiving them—ought to be recognized as their accepted organ. THE “REVIEW” AND UNITED STATES VETERINARY MEDICAL ASSOCIATION PRIZES—the first paper received—it treats of an important subject—the attention of the Committee on Prizes called to it—more candidates expected.

THE AMERICAN VETERINARY COLLEGE.—When, in 1875, the first announcement of the Faculty of the American Veterinary College was issued, a howl was at once started against that institution and its alleged illegal existence, though it had been

carefully organized and incorporated under the General Law of the State, as other large and important institutions in the State had been, and which had no other legal right to work. This fact, however, its enemies refused to consider. What was a good and sufficient authorization for other enterprizes, failed, in their estimation, when applied to the case of the American Veterinary College, and the sudden collapse of an institution which was operating under false pretences (?) was confidently and complacently predicted. But the why and wherefore was a question no one could satisfactorily answer, for there were none but imaginary reasons for such a forecast; "the wish was father to the thought."

The establishment of the A. V. C. was a good work and originated in a commendable purpose, and those connected with it were not to be alarmed by the howling of a few discontented and jealous spirits in opposition. Still, there lingered a degree of doubt in the minds of some of its timid friends, who seemed to be impressed with an apprehension of a lack of some sort of substantiation which ought to be available, though there was the law, positive and tangible, to which reference was easy, and which every man could read for himself. But for all this, some vaguely conceived and undefined desirable element seemed wanting, and some sort of positive self-assertion appeared to be demanded.

Under these circumstances, and without any fear of any but a confirmatory and satisfactory result, the trustees of the college made application to the Attorney General of the State for his official opinion upon the status of the institution. This was readily obtained, and was promulgated in the annual announcement of the college for the year 1876. There was now nothing more to say, and those who had been most ferocious in denouncing the American Veterinary College, and confident in predicting its early dissolution, became mute, and the college was permitted to enjoy in comparative quiet its subsequent and successful life, and to congratulate itself upon its recognition by the Regents of the University, its increasing classes of students, and its slowly enlarging alumni association.

This comfortable condition was undisturbed for a few years, but could not last forever. There was a cotemporary institution

which had from the birth of the American Veterinary College proved itself an envious and jealous enemy, and was industriously occupying itself in insulting the new and flourishing school, and seeking to disparage the value of its diplomas. They professed to hold that though the "school" might have been "incorporated," it still was not "chartered;" the "general law" was no law to organize under; a "special" act of incorporation was the only proper one, and no other could guarantee a valid diploma; no veterinary surgeon could be considered "regularly" graduated if he had only a American Veterinary College diploma. And much more of that sort, to the extent of their malice and ingenuity. Then came the suit against the United States Medical College, and the decision against it, declaring the illegality of its existence and organization, as determined by the decision of the Court. This was quite too grand an opportunity to leave unimproved. The American Veterinary College had been neglected and tolerated too long; the diplomas it issued must be again attacked, and, if possible, invalidated, by words at least, though not by resorting to the machinery of the courts, and reaching for a judicial decision, which was a cause for a procedure which might involve some other parties in unpleasant results.

Public announcement that there is but one school authorized by "special act" to grant diplomas, having been freely and industriously promulgated, and acting upon the theory that persistent pounding on one spot, however light the impression made by each blow may be, and though the result may not be perfectly satisfactory, will yet inevitably leave some marks, the Alumni Association of the American Veterinary College, probably stimulated by some ill-disposed members, began to fear that there must be some element of truth in the persistent and slanderous assaults made upon the standing of their alma mater, and one of them was induced to institute a legal suit to test the value of his degree. But a favorable decision in this case, though readily granted, was not likely to be satisfactory to the Board of Trustees of the College. They have honestly carried on their work for the last eleven years, and they feel that it cannot fail to be recognized and appreciated. Their act of incorporation is legally sound in every sense of the

word, and the decision of the Court of Appeals in the case of United States Medical College cannot apply to the American Veterinary College. The proper test, and the only one which could satisfy must be that which they have sought from the fountain of authority, the Legislature of the State, and this has been obtained in the form of an act of which we print the text in the present number of the REVIEW. This act was passed by the Assembly on the 12th, and by the Senate on the 15th, and received the signature of the Governor.

The work of the American Veterinary College, as incorporated under the general law in 1875, is now sanctioned, reaffirmed and recognized by *special act* of the Legislature of 1886.

What will be the next step in advance of the constantly progressing history of that institution, remains to be seen.

HOG CHOLERA NOT ROUGET—WHAT IS IT?—Of all the discoveries which have resulted from the manifold labors of Pasteur, it has seemed to us that not one has promised to be of greater advantage to the agriculturist and the stock raiser, or, therefore, of greater interest to the veterinarian, than that which comprehends the prophylaxy of hog cholera. We could but reflect that if so simple an operation as that of double vaccination should be sufficient to protect the swine of the country from a disease which is costing our people millions upon millions annually in pecuniary loss, it was a matter which quite too largely affected the national wealth to be ignored or slighted.

What we have ourselves observed of the disease in Europe; the post-mortem examinations we have had opportunities of conducting in this country; the reports we have studied in the various agricultural papers; the light we had derived from the writings of Detmers, Law, Salmon and other investigators, concerning the nature, the etiology, the symptoms, and the lesions of the disease, whose views we had carefully collated and considered; had, we confidently judged, fully justified the conclusion we had reached, that the disease in Europe and in America was identical. Allowing for such minor differences as must be always looked for in the writings of different authors on the same subject, the general result seemed to be a settled one, and the natural

result upon our own mind was a strong and effective desire to secure the benefits for our own country which must needs follow the introduction and establishment of the plan of Pasteur, as not alone one among the prophylactic measures, but as *the* means, preeminently, of perfect prophylaxy in the case.

With this impression, we procured a supply of vaccine directly from the Pasteur laboratory, hoping for gratifying and important reports of its workings—to be sadly and effectually disappointed. It was tested under the best of auspices, portions having been furnished to the Bureau of Animal Industry in Washington and to the State Veterinarian of Nebraska, and the united testimony from both directions is of failure—disastrous failure in Nebraska, and worse than that in Washington. In Nebraska the result was negatively bad, simply in the fact of its being a failure as a prophylactic. But in the hands of Dr. Salmon it quite exceeded that, for the vaccine is not only inert as to preventive qualities, but may prove to be the agent of the introduction into the United States of a fatal swine disease, hitherto wholly unknown here, viz., that of *rouget* or *rothlauf*, the only disease amenable to the vaccine prophylaxy of Pasteur. In the series of letters which appeared in the *Breeders' Gazette* (not the REVIEW), and the publication of which we begin to-day, Dr. Salmon presents the public with the reasons he deems explanatory of the failure in his hands of Pasteur's vaccine. The nature of the disease is not that which it has been represented to be; in respect to the important points of its incubation, and its duration, and the post-mortem lesions, all is different, and of course under such conditions, nothing less than failure could be expected, at the very best.

But if our hog cholera is not *rouget*, and not *rothlauf*—what is it? German and French investigators had made the announcement months ago that there were two diseases of swine, especially in Germany, equally fatal, and very similar in their symptomatology, but very different in their nature, at least as to their parasitic character, one of them being undoubtedly the *rouget* of the French or *rothlauf* of the Germans, the other being better known as *schweineseuche*. The important inquiry arises, whether

it is not this last-named malady which is destroying American swine; is not this the agency by which the Western States are losing millions annually?

This is truly an important question, and one also which unfortunately, cannot be decided to-day, though the worthy veterinarian of the Bureau of Animal Industry has attempted to give us the evidences that hog cholera is not *rouget*, in the remark, "that the microbe which produces the first is very different from the other; that the introduction of Pasteur's vaccine is not only useless but may contribute to the introduction and spread of a disease, the existence of which in this country has not yet been demonstrated," concluding his series of papers to the *Breeders' Gazette* by saying, "that he tenders the gratuitous observation that it would still be premature to jump to the conclusion that the German *schweineseuche* is identical with our hog cholera."

Our readers will find pleasure and profit in reading Dr. Salmon's letters. For better information on the subject, however, we would refer them to the second annual report of the Bureau of Animal Industry for 1885, recently published. This report contains a minute description of the investigation conducted by that section of the Department of Agriculture, and contains strong evidences of the intelligent manner and original views with which our worthy colleague seeks to throw light on the subject. Rouget, hog cholera, rothlauf or *schweineseuche*, whichever further investigation may prove it to be, is an important subject in a scientific point of view. If Pasteur's vaccine is a failure, cannot another be found? This is a gratuitous suggestion to those who are better acquainted than we profess to be with the delicate laboratory manipulations which such work demands.

GANGLIONAR LEUCOCYTHEMIA.—We give an interesting history, (with diagram), contributed by house-surgeon Dr. Walrath, of a post-mortem examination of a mare which was for a long time affected with this disease. The extent of the lesions, the peculiar appearance presented by the animal, and the fact that until the disease had reached a comparatively advanced stage, her functions were normally performed, her general condition continued to be good, and she was able to perform her work down to a period

within a few days of the time she was destroyed, will render the publication of the case interesting.

It is comparatively of recent date, or within only a little over twenty years, that this form of disease has been well observed amongst domestic animals, although the *Veterinarian* of 1839 contains a case recorded by Gulliver, which though not under that name, gives undoubtedly the evidence of its nature, viz.: an increase of the number of the white corpuscles. This condition of leucocytosis, it is true, is only a symptom, though varying in its character, well marked in some cases, where the disproportion is enormously great, while in others it is very much less remarkable. The usual normal relative average may be stated as 800, 900, 1,000 or 1,100 red to a single white corpuscle; of course not universally so. In the case recorded, the corpuscles numbered relatively, about one white to two hundred and sixty-five of the red blood cells. The difference has been sometimes noticed to be greatly in excess of this, cases being recorded where the figures stood one white to 85, 50, 46, 20, 15 and 12 of the red. The difference in man has been observed to be much greater, even standing 1, 2, 3 and 4 of the red to a single white. In all cases recorded, the diseased process existed, not only in the external, but also in the internal lymphatics, this case presenting this peculiarity, that none of the internal organs were diseased. All parenchymatous structures, such as the spleen, the kidneys, the intestinal, the heart and the lungs were in a healthy condition. The trouble was altogether limited to the external lymphatics of the whole body, and to a great extent represent a true case of *general cutaneous leukaemia*, or *ganglionar leucocythemia*. The literature on the subject of this affection as affecting domestic animals is comparatively limited, and amongst the cases recorded by Nocard, Griolet, Mauriz, Leblanc, in France, and Leisering, Bruckmuller, Siedamgrotzky and Bollinger, in Germany, none of this variety of case is found. So far as experience extends, this is the second case brought to our notice; another patient somewhat similarly, but not so extensively affected, was brought before the clinics of the American Veterinary College some eighteen months ago, but the case was lost sight of before a correct diagnosis, by *counting the blood* elements, could be accomplished.

MORTALITY OF HORSES IN NEW YORK.—We are indebted to the courtesy of Dr. S. S. Field for a statement of the number of dead horses received at the rendering dock of the city. The numbers were reported monthly for the first five years, and quarterly for the year 1885, and during these six years the number is found to aggregate 39,957. Further statistics would doubtless be interesting, were they accessible, and it is to be regretted that a more general and thorough statement cannot be obtained. The pathological statistics of the subject would be of interest. If we could learn more of the causes of mortality, and, aside from the ordinary forms of inflammatory diseases, could be advised of the number of animals which have died or were destroyed because of contagious diseases, it would largely assist us in devising measures of precaution against that class of maladies which without doubt contribute largely to the annual depletion of our equine population. In collecting the statement which follows, Dr. Field has certainly taken a step in the right direction. We hope he will continue his work, and, if he will accept our suggestion, and make application to the Board of Health for the necessary data, he may be able to improve his statistics greatly in the future, by giving us the number of glanderous and farcinous animals which find their way to the foot of Thirty-eighth street.

STATEMENT OF NUMBER OF HORSES RECEIVED AT RECEIVING DOCK, FOOT THIRTY-EIGHTH STREET, NORTH RIVER.

	BY DR. S. S. FIELD.					
	1880.	1881.	1882.	1883.	1884.	1885.
January.....	400	549	574	510	607	
February	417	564	606	451	545	
March	435	715	731	568	720	1,870
April.....	435	633	670	479	623	
May.....	436	537	546	469	541	
June	446	457	463	542	479	1,464
July.....	594	492	565	641	495	
August	511	599	545	517	497	
September	528	666	527	480	695	1,932
October	760	713	674	554	420	
November.....	765	726	496	494	394	
December.....	451	679	536	476	436	1,681
Total.....						39,957

REPORTS OF VETERINARY SOCIETIES.—State veterinary societies are comparatively new organizations in our country, and while some of them may claim for themselves a tally of years which quite relieves them from the stigma of being mere juveniles, there are others which really and consciously feel themselves to be still amenable to the charge of youthfulness, and allow that feeling to deter them from assuming what is in reality their proper position before the public. Hence their needless modesty in announcing themselves and uniting in current published communications and reports. The REVIEW has always been willing, and would take pleasure, to become the medium of intercourse between our professional brethren of every degree, and our pages are always open to any papers of value and interest which may be presented at the meetings of the various associations. In this, we have done nothing more than to fulfil a simple duty. As the principal organ of the veterinary profession on this continent, we have never ignored any proper request from any source. This having been our uniform course, it becomes a pertinent question to ask, whether it is not the proper thing for our American societies and brethren to take advantage of the hospitality we offer; and whether it is right to ignore an American publication and to seek that of a foreign country, when there seems to be a proper occasion for an appearance in the press? We feel this to be an injustice and an error. What takes place in the United States must necessarily be of greater interest to Americans than to English, French or German papers or people. We are prompted to these remarks by the reading of the reports of a Western society in one of the English journals. In crossing the Atlantic to find an organ that society has, of course, exercised a mere right which is exclusively her own, but would it not have been better to include the REVIEW in the courtesy of the same transaction.

If the Minnesota Veterinary Medical Association, or any other on the continent, will do us the kindness to remember us in the future, we will endeavor to treat them with the same justice and propriety which characterizes our intercourse with those who have accustomed themselves to consider the REVIEW as their own national organ.

THE "REVIEW" AND THE UNITED STATES VETERINARY MEDICAL ASSOCIATION PRIZES.—We publish in this number a paper on the etiology and pathology of parturient apoplexy in cows, presented by one competitor for the prize offered by the REVIEW in connection with that of the United States Veterinary Medical Association. This paper is the first that has come to us, and the first which is presented under the rules laid down for the competition. The committee on prizes of the United States Veterinary Medical Association, which consists of Drs. Corlies, Peabody and Johnson, will no doubt read it attentively, and we hope that our readers will carefully take notice of the article and be prepared to vote when the time comes. The paper is signed by "Incognitus." A sealed envelope, which we suppose contains the true name of the candidate, accompanies the essay, with the same motto on it outside, and has been placed in the hands of the secretary of the United States Veterinary Medical Association for safe keeping until the vote is known. The example is worth following, and we hope more applications will soon reach us.

ORIGINAL ARTICLES.

PARTURIENT APOPLEXY.

A Paper on the Etiology and Pathology of Parturient Apoplexy in Cows, respectfully submitted in competition for THE AMERICAN VETERINARY REVIEW Prize.

BY INCOGNITUS.

There is perhaps no disease to which bovine flesh is heir concerning the etiology and pathology of which there is less definite knowledge and greater diversity of opinion than parturient apoplexy. The various theories which have from time to time been formulated to explain the phenomena of the disease have, notwithstanding their inconsonance, numbered as ardent supporters some of the most eminent of bovine pathologists. The obvious result of this great diversity of opinion relative to the etiology and pathology of the disease, is that equally divergent modes of treatment have been practised; all of which, to the chagrin of the practitioner and loss of the stock owner, have proved most singularly unsuccessful.

In their writings on parturient apoplexy, as of many other diseases, veterinarians have to a great extent figured only as foster-parents. Now, while we fully appreciate the priceless value of the advantages our profession has derived from the accumulated knowledge of its elder sister, human medicine, and while the importance of the study of comparative medicine and surgery is obvious, still that the wholesale system of adoption practised by many writers on veterinary medicine has led to grave and unpardonable errors, and has been chiefly instrumental in bringing about a lack of independence of thought and original investigation, is, it appears to us, a fact too perspicuous and axiomatic to fail of recognition by the least observant.

The Traube-Rosenberg theory, "that eclampsia (in women) is due to œdema cerebri and the sequential anæmia," was adopted into veterinary medicine and ably supported by Franck and Fleming; while the one most generally accepted in human medicine, "that it is due to intoxication of the blood with the entire element of the organisms which go to make up the urine," was espoused by Dr. F. S. Billings, V.S., and vigorously supported in a paper read before the Boston Gynecological Society and published in the *Journal of Comparative Medicine and Surgery* for April, 1884. Before adopting these theories into veterinary medicine it was, as evidenced by the statement of Dr. Billings that "one cause must produce the phenomena in man and animals," assumed that eclampsia parturientum in women and parturient apoplexy in cows were analogous diseases. That there is some evidence to warrant that assumption is morally certain, but it is equally certain that that evidence is not sufficiently conclusive to justify such a dogmatic assertion as the one just quoted. Hence, it matters not one iota to the veterinarian which, if either, of those two theories be correct in human medicine unless it be shown beyond the peradventure of a doubt that parturient apoplexy in cows and eclampsia parturientum in women *are* analogous diseases. To our mind this has not been very satisfactorily shown, but since, as above stated, there is some evidence to support that view, we shall consider each theory as it applies to parturient apoplexy in cows, regardless of its

merits or demerits in human medicine, and leave until farther on the discussion of the question whether "one cause must produce the phenomena in man and animals."

The Traube-Rosenberg theory is founded on the *fact* that there is intercranial hæmal obstruction, the result of an altered condition of the circulation, produced by increased aortic pressure and the *supposition* that the resulting cerebral hyperæmia is always succeeded by œdema and anæmia. Many cases of active cerebral hyperæmia are not followed by œdema and anæmia; therefore to ascertain whether such be the case in parturient apoplexy in cows, the student must rely almost entirely on the clinical history and pathological anatomy. Inasmuch as Brown-Sequard has shown that epileptic convulsions are preceded by anæmia of the nerve centres, and Kussmaul and Tenner have proved, by numerous experiments, the dependence of convulsions on cerebral anæmia, is it not more than probable that if cerebral anæmia were the cause of parturient apoplexy in cows, convulsions would, at least, be a common, if not a constant, symptom of the disease? But it is a notorious fact that convulsions are rarely or never present; in fact we have never seen a case where genuine convulsions occurred, except during the last throes of death; but neither have we seen a case where spasms and deliriums were not present during the early stages of the disease. In judging of the occurrence of convulsions it is essential that they be carefully distinguished from deliriums and spasms, and consequently in default of that distinction certain writers mention convulsions as a symptom of the disease, while others remain perfectly silent respecting this point, leaving us to infer that they have never seen what they consider genuine convulsions. It is an incontrovertible fact that cerebral anæmia produces symptoms resembling to a degree those of parturient apoplexy, but it nevertheless appears that the paralysis and the profound and prolonged coma of that disease resemble more closely the phenomena resulting from active cerebral hyperæmia. Fleming says the "anatomical arrangement of the 'rete mirabile' is such that it chiefly supplies the cerebrum; this should tend to explain why in eclampsia in the cow, the comatose symptoms are so com-

mon that convulsions seem exceptional"; while Dr. Billings says "the reason that convulsions are not so frequent or severe in cows, assuming the cause to be the same, is surely not to be sought as much in any peculiarities of the circulation, as in the very low degree of nervous irritability which is common to the bovine species."

Fleming founds his explanation on the belief that anæmia of the cerebrum is less likely to produce convulsions than anæmia of the medulla, and the erroneous conclusion that the "rete mirabile" by its "anatomical arrangement" renders cerebral hyperæmia more likely to be followed by œdema and anæmia, whereas the fact is that this peculiar distribution of the vessels renders active cerebral hyperæmia less likely to be followed by œdema and anæmia; for effusion is more likely to take place where the maximum weight of blood pressure is quickly reached and the vessels rapidly distended to their utmost capacity. "The very low degree of nervous irritability which is common to the bovine species" would, to a certain extent, render convulsions less frequent and violent; but, "assuming the cause to be the same," it does not account for their entire absence, especially when it is remembered that, under other conditions, convulsions of a most severe type occur in cattle.

The reason why convulsions are seldom or never seen in parturient apoplexy in cows is to be sought more particularly in the etiology of the disease than in any peculiarity of anatomical arrangement or lack of nervous irritability in the animal.

A necropsy, having for its object the examination of the contents of the cranial cavity, should be conducted with the utmost precaution, for merely post-mortem meningeal hyperæmia or anæmia is no index of ante-mortem cerebral hyperæmia or anæmia, inasmuch as the condition of the meningeal vessels depends to a great extent "upon the position of the body after death, the length of time during which the blood remains fluid, the manner of dying, and whether the head or trunk is opened first at the post-mortem examination." (Flint.)

In view of the great importance of a correct knowledge of the pathological anatomy, it is a much-to-be-regretted fact that

very few veterinarians seem to have taken the trouble to thoroughly investigate the matter for themselves, and hence there is a very great dearth of literature pertaining to this phase of our subject. But, notwithstanding this dearth, there is, taken in connection with our own observations, sufficient to convince us that the cerebrum is in a hyperæmic condition, and that anæmia of the brain is rarely present even in the last stages of the disease.

As might well be expected, the urine intoxication theory has been treated with cold indifference in the domain of veterinary medicine, but since it is the one commonly accepted in human medicine, and since a large number of veterinarians are inclined to the belief that the same agencies produce the phenomena in both man and animals, it is certainly worthy of careful consideration. If this theory be accepted, it must also be admitted that in parturient apoplexy in cows, as in eclampsia parturientum in women, anuria as well as albuminuria precedes the attack. In regard to this matter Dr. Billings says: "The secretion of urine generally diminishes early in the attack; anuria is frequently present. The urine contains albumen and casts. Franck says he has frequently observed albumin to be present in the urine of cows antecedent to parturition.

"Veterinarians do not seem to have given sufficient attention to this condition of the urine, a circumstance which must necessarily lead to mistaken views as to some of the complications, in fact that which we consider the chief one of the disease.

"That albuminuria is present in nearly every severe case is unquestionably true, yet so practical a writer as Williams says: '*The urine is pale in color and free from albumin; the secretion is retarded.*'

"Fleming says: 'Micturition is also, as a rule, suspended from the commencement; consequently urine accumulates in the bladder. When speaking of treatment he also says: 'The urine should be frequently removed from the bladder.'

"Here are two errors, one due to false translation; the other to want of practical experience, or perhaps forgetfulness.

"Micturition means passage of urine. Mr. Fleming should

have translated Franck's words as follows: 'The secretion of urine is generally stopped, anuria; in some cases, it is only partially suppressed, however.'

"Urine does not accumulate in the bladder, that organ being frequently almost empty for hours; hence removal of its contents is unnecessary unless at an early stage, or in order to examine it. On account of the paralyzed condition of the patient it is a question if the urine would not flow out of itself, the position of the animal favoring it, when the bladder overfills. Spinola says, 'that it frequently does.' I have never seen a bladder so distended, even in the early stages, that it was necessary to empty it for the comfort or health of the animal."

These remarkably inconsistent statements afford but another illustration of how the shackles which the teachings of our predecessors, our own preconceived ideas and long cherished theories are apt to clasp upon us, may lead us into the error of mistaking effect for cause.

No sane man at all acquainted with the clinical history of the disease would for an instant deny the presence of anuria any more than he would that of paralysis, but neither of them is among the first manifestations of the disease; therefore the former, as well as the latter, is a result and not the cause of the disease; for it is impossible for urine intoxication to be the cause of a disease the beginning of which is not preceded by a diminished secretion of some element of the urine.

We would not for an instant attempt to calculate the "practical experience" of any writer from a single assertion, but if Dr. Billings has "never seen a bladder so distended, even in the early stages, that it was necessary to empty it for the comfort or health of the animal," his has been, to say the least, a most remarkable experience. We have never seen a case where catheterization was not necessary both for the health and comfort of the patient, except where micturition had been accomplished shortly before the recumbent position was assumed, and this is strictly in accord with the experience of a larger number of practical veterinarians, a list of whom we have before us and among whose names appear those of such men as Fleming, Delwart, St. Cyr, Cruzel,

Williams, Hill, Steel, Smith, Liantard, Michener, and many others of prominence. And, moreover, it is an established scientific fact, applicable to the cow, as to all other mammalia, and explicable by perspicuous physiological axioms, that during the forty-eight hours immediately following the act of parturition the secretion of urine is greater than during any other equal period of health. In the first place, this fact fully accounts for the distended condition of the bladder at the time the practitioner is called, and in the second place, in view of the fact that parturient apoplexy seldom occurs within twenty-four hours after parturition, *it precludes the possibility of the blood being "intoxicated with the entire element of the organism which go to make up the urine."*

Taking for granted that, as Billings says, nearly every severe case of parturient apoplexy in cows is accompanied by albuminuria, and that, as Franck says, it is often present antecedent to parturition, that proves absolutely nothing in regard to the etiology of the disease. In order to prove the dependence of a disease on albuminuria, it is not necessary to prove that it follows every case of albuminous urine, but it is necessary to prove that every case of the disease be preceded by albumin in the urine; and in the disease under consideration even more than that is necessary, for very nearly if not quite every case of advanced pregnancy is accompanied by a varying increase of albumin in the urine, the quantity of which is probably augmented by an attack of parturient apoplexy and possibly the more severe the attack the greater that augmentation, but the quantity of albumin in the urine previous to parturition affords evidence of the probability of an attack of parturient apoplexy only so far as it indicates the extent of the physiological changes which take place during the latter stages of utero-gestation. Albuminuria is a result of advanced pregnancy and perhaps parturient apoplexy, and no more the cause of the latter than of the former.

The foregoing opinion, relative to the presence of albumin in the urine of pregnant cows and its importance as a factor in the etiology of parturient apoplexy, is based on personal observations and the following physiological laws which favor the production

of albuminous urine at that particular period: first, an increased activity in the circulation owing to a physiological hypertrophy of the heart; second, an increased quantity of blood, thereby producing an increased vascular fulness; and third, an increased amount of fibrin factors accompanied by a diminished proportional amount of corpuscles and albumin in the blood.

The question, are eclampsia parturientum in women and parturient apoplexy in cows analogous diseases produced by analogous causes is briefly presented in the following table of comparison:

WOMEN.

About eighty per cent. of the cases are in primiparæ.

It is generally in connection with a difficult parturition.

It very frequently manifests itself during delivery.

Convulsions are the chief characteristic of the disease.

The temperature of the body is above normal.

The urine contains albumin both before and during the attack.

The bladder as a rule contains but little urine.

There is functional inactivity of the kidneys both before and during the attack.

There generally is œdema of the face and extremities.

The head is frequently drawn to one side, said to be due to contraction of the muscles of the neck.

A post mortem examination reveals anæmia of the great nerve centres.

During the convulsions the pulse is weak, quick and often intermittent, but as the convulsions subside the pulse becomes slower and stronger.

COWS.

There is no proof that it ever occurs in primiparæ.

It seldom or never occurs in connection with a difficult parturition.

It seldom or never manifests itself until from twenty to thirty-six hours after delivery.

Convulsions are seldom or never present.

The temperature of the body is below normal.

The same in cows.

The bladder as a rule is more or less distended with urine.

There is increased functional activity of the kidneys before the attack, but functional inactivity of those organs, as well as of many others, after coma sets in.

There never is œdema of the face and extremities.

The head is almost universally thrown round on the shoulder, also, but very erroneously, said to be due to contraction of the muscles of the neck.

A post mortem examination reveals hyperæmia of the great nerve centres.

The pulse is at first generally full, soft and slow, but subsequently becomes quick, small and wiry, and finally imperceptible.

To briefly recapitulate it will be observed that in women a large percentage of the cases are in primaparæ, generally in connection with a difficult parturition, and most frequently during delivery and especially in the periods of dilatation and expulsion; while in cows it never occurs in primaparæ, nor in connection with a difficult parturition, and it is seldom seen within twenty-four hours after delivery. Again, in women there appears, in a majority of the cases, to be a direct connection between the act of parturition and the disease, great and general irritability of the nervous system, and more or less rapidly recurring convulsions; while in cows there is no direct connection between the act of parturition and disease, the general irritability of the nervous system is entirely wanting," and genuine convulsions are seldom or never seen. Robust, young, and nervous women, and mature, plethoric, and deep milking cows are more liable to this affection than those of opposite classes; in fact a plethoric maturity seems to be an essential factor in the etiology of the disease in cows, while in women the disease, in its nature, appears to be essentially a reflex neurosis, probably resulting from stenosis.

Notwithstanding the universally accepted dogmas of eminent veterinarians to the contrary, we are by the foregoing facts irresistably drawn to the conclusion that eclampsia parturientum in women and parturient apoplexy in cows are entirely different diseases, produced by different causes, and presenting very different phenomena.

The theory which, above all others, is least sustained by facts and most purely the work of the imagination is that propounded by Barlow and vigorously supported by Williams, and of which the latter says: "The arrest of the lactiferous secretion is doubtless due to some disturbance of the organic system of nerves, but how this arises is difficult to determine unless we take into consideration that the great sympathetic is developed to a greater extent in deep milkers than in other cattle, and that in consequence it is more susceptible and more prone to derangement from trivial causes."

Where the lactiferous apparatus is more highly developed the logical inference is that the portion of the sympathetic nervous

system supplying that apparatus is also more highly developed, but that the whole sympathetic nervous system is more highly developed in consequence of this increased development of a certain portion of the system is most assuredly an illogical inference. Williams is not only wrong in his premises but also in his reasoning, for if it be granted that the whole sympathetic nervous system is more highly developed it does not follow that it is "more susceptible and more prone to derangement from trivial causes."

An increased functional activity without a corresponding increase of development would, most certainly, render an organism more liable to derangement from trivial causes; but an increased functional activity, provided it be accompanied by a corresponding increased development, does not, by any means, render an organ "more susceptible and more prone to derangement from trivial causes." Well bred cattle are, as a rule, of a more nervous temperament, but that is independent of any increased development of the lactiferous apparatus.

It is also stated that whereas parturient apoplexy follows an easy delivery the amount of nerve force provided by nature for the accomplishment of the act of parturition is not expended and that the surplus of nerve force thus remaining, by some means, deranges the sympathetic system of nerves and thereby produces the disease.

The *ridiculousness* of such an explanation is too apparent to render it worthy of serious consideration.

That the functions of the sympathetic nervous system are deranged in parturient apoplexy appears quite evident, but that that derangement is brought about by an increased development of the system, or by a surplus amount of nerve force is, to say the least, decidedly improbable.

The theory of Dr. J. H. Cox, that parturient apoplexy is due to thrombi being formed in the cotyledons of the uterus, and that the phenomena of the disease are due to embolism and its effects is as inconsistent with facts as it is ingenious, for thrombi formed in the uterus, if they enter the circulation at all, must of necessity enter it by the uterine veins and in such a case

is it not reasonable to infer, nay, is it not absolutely certain, that they would be obstructed in the lungs and that pulmonary, not cerebral apoplexy would be the result and the primary lesion? And moreover, it might be pertinently asked, does the uterus always contract forcibly and quickly, and are its vessels always "in that pristine condition necessary to prevent the admission of thrombi into the circulation," in old and debilitated animals, in poor milkers, and after a difficult parturition?

The theory of cerebral hyperæmia, or rather the Traube-Rosenberg theory as adopted and supported by Franck and Fleming, except that the cerebral congestion is not followed by œdema and anæmia, is certainly worthy of careful consideration, inasmuch as it is sustained by the clinical history and pathological anatomy and explains more fully and satisfactorily, than any other yet propounded, the complex phenomena of the disease.

The cerebral hyperæmia is a result of increased aortic pressure and cerebral excitement consequent on the act of parturition. The increased aortic pressure is produced by a physiological hypertrophy of the heart and an increased vascular fulness which are always present in advanced pregnancy; by the excessive plethora so common in deep milking cows when dry or nearly so; and by the large quantity of blood, required by the uterus during the latter stages of utero-gestation, being thrown back on the system after parturition.

The fact that parturient apoplexy is more common in the best milking strains of well bred cattle is explained by the fact that they are, as a rule, better cared for and that deep milkers become much more plethoric when dry or nearly so, as just before calving. It seldom occurs before the third and after the seventh calf, because between those periods the animal has reached maturity, but has not yet begun to decline, and it is therefore more disposed to plethora, while the act of parturition occasions less constitutional shock and exhaustion.

The cow is rendered more susceptible to the disease than other animals because by domestication and careful breeding she has been converted into a mere milking machine, as it were.

The reasoning which says that were the mental excitement

consequent on the act of parturition and the removal of the offspring a predisposing cause of the disease, then it would occur more frequently in primiparæ, is, to say the least, both narrow-minded and absurd, for other conditions are by no means equal, inasmuch as at the first calf maturity has seldom been reached and even where it has, the exhaustion is much greater, and the plethora less than at a subsequent calf.

The chief arguments used against the theory of cerebral hyperæmia are "It's too simple" and "I don't believe it," but since in medicine facts are king and mere belief or disbelief counts for nothing, and science is but the systematic classification of established and self-evident facts, such arguments are not worthy of serious attention.

The foregoing comprises a short review of not only the most recent theories formulated to explain the complex phenomena of parturient apoplexy, but also of those theories most generally accepted by competent veterinarians, and therefore, although they be innumerable, those remaining unnoticed are not of sufficient importance, having long since been exploded, to warrant the prolongation of an already somewhat lengthy paper.

It has been stated that it requires much less intellectual worth to criticise than to construct a theory, but that depends entirely on whether the theory constructed be imaginative or in accordance with "the cold logic of facts." In consequence of neither possessing a high degree of intellectual ability, nor being of an imaginative turn of mind, we have neither aimed at presenting anything startlingly new nor profoundly wise. But in the study of our subject, knowing that too frequently conclusions are formed from preconceived ideas, important facts being taken entirely out of their proper relations to support perchance a theory which has little to sustain it but the enthusiastic exuberance and ingenious imagination of the individual in whose mind it originated, while scarcely less important facts are completely ignored for the same irrational purpose, we have endeavored to collect and classify according to their importance and relations to one another all the obtainable facts relating thereto, from which data, inasmuch as we have not been in-

fluenced by any desire to rear some original pet theory, our conclusions have been cautiously and impartially drawn. We have not, however, been oblivious of the fact that popular prejudice is somewhat disposed to deem it presumption in a younger member of the profession to doubt the views entertained by his seniors, especially when he essays to place those doubts on paper, and therefore our defense is that, having carefully examined the various hypotheses advanced by the different writers on the subject, in our deliberate judgment there are excellent reasons for seriously doubting the soundness of the views generally entertained by the profession; and such it has been the object of this paper to show, in the hope that it might aid in stimulating more competent members of the profession to greater exertions and thereby expedite the settlement of this much vexed question.

INCOGNITUS.

THE ÆTIOLOGY OF RABIES AND THE METHOD OF M. PASTEUR FOR ITS PREVENTION.*

BY HERMANN M. BIGGS, M. D.,
Instructor in the Carnegie Laboratory.

The ætiology of rabies and the investigations of the cause or causes of the disease and of the conditions which predispose to its development or act directly in its production, form subjects of inquiry of the greatest importance. Upon the solution of these questions depends largely the determination of the methods to be sought for in the prevention of this disease, which is perhaps the most terrible one to which the human or animal organism is subject. Much study has been given to these questions, and among the writers who have made investigations in this direction may be found many of the most distinguished veterinarians of every generation. These investigations, however, have resulted only in the presentation of many hypotheses as to the nature and character of these causes. They have not established a single

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condition or circumstance which can bring about or predispose to the development of the disease, excepting only the contagious principle as transmitted from rabid animals. The origin of the malady in the canine and feline species is, in many instances, involved in the greatest obscurity, and, being unable to account for these cases upon any other supposition, many observers have believed in the occasional spontaneous origin of the disease. Fleming, the ablest of the recent English writers on this subject, says: "And rabies, we feel we are justified in asserting, must also be included in the list of diseases with glanders, anthrax, typhus in pigs, and the distemper in dogs, which, generated under certain favorable conditions, during their course develop a virus that, like a ferment, acts as a leaven in producing morbid and characteristic changes when it obtains admission to the previously healthy body, and there are few nowadays who are not convinced that it will occasionally appear in a spontaneous manner and without any exciting cause."

The most potent arguments which have been brought forward as proving the spontaneous development of rabies are: 1. The appearance of the disease in an epizootic form in countries where it has been previously unknown, and where its appearance could not be traced back to any foreign source. The epidemic of the disease in Peru, in 1803, may be cited as an instance of this kind. 2. It is urged that the appearance of the disease in an epizootic form in some countries at rare intervals can also only be explained in a satisfactory manner on this hypothesis. It has been observed, not infrequently, that, in certain countries which have been free from the disease for long periods of time, suddenly it appears in almost an epidemic form, and, after a short time, becomes again apparently extinct. Dr. Roucher, as quoted by Fleming, refers to the appearance of the malady in Algeria as confirmatory to some extent of its spontaneous origin. The marked intermittence in its manifestation at different geographical centers; the multiplicity of cases at certain epochs of very short duration, contrasting strikingly with their rarity at other times; the intervals between the outbreaks, which are longer than the period of incubation of the virus; the small number of cases as

compared with the crowds of wandering dogs; the difficulty of explaining the maintenance of the disease in every region after long interruptions—all this would lead to the supposition that inoculation is not the sole cause in Algeria.

But whatever disagreement there may have been among writers as to the spontaneous origin of rabies, there has always been the greatest unanimity as to its contagious nature. This important fact has been universally recognized by the most competent medical writers from the very earliest times. But more recently, we may say, it has been almost fully established that this contagious principle, whatever may be its nature, is the only “evident, efficient, and incontestable cause” in the production of this malady. The occasional spontaneous development of the disease in certain of the carnivora, as advocated by many veterinarians, must be entirely rejected, in view of the facts recently demonstrated with relation to the germ diseases, and we must accept absolutely the conclusion that “this disease is maintained and spread solely by its contagious principle, and that there are no other causes in operation.”

The facts adduced by Roucher, Fleming, Tardieu, Bouley, and others, to prove the spontaneous appearance of the disease, may be readily and rationally explained on the ground of its purely contagious nature, and the arguments brought forward to sustain the former view may be easily refuted. It is a matter of the greatest importance that those fallacious ideas should be corrected which are so prevalent among the laity, and to no small extent among the profession in regard to the influence of climate, season, hunger, thirst, food, pain, anger, an unsatisfied sexual desire, and the thousand other causes that have at one time or another been adduced as predisposing to or producing the disease in dogs. There are no better or more reasonable grounds for believing that any one or all these influences combined can bring about the development of a single case of rabies than that unfavorable sanitary conditions can produce small-pox when the specific contagium vivum of the disease is not present. So strong has been the popular belief in the effects of the season in the production of rabies, that not even the testimony of indisputable facts has been

potent enough to dispel it. It has been almost a universal belief since the earliest times that the canine species are more susceptible and liable to an attack of this malady during the hot weather than at other seasons of the year, and for certain periods during the summer and autumn months many precautions have been taken to protect man against the possible dangers arising from this cause. During this period we find that in many cities there are municipal ordinances requiring that all dogs at large in the streets shall be provided with muzzles, while during the remainder of the year they are left free. The danger from the possible development of the disease has been supposed to be proportionate to the intensity of the heat. This supposition has been maintained in spite of the fact that it has been shown in the most unmistakable manner, by large masses of statistics collected with the greatest care in France and Germany, that the disease is not more prevalent in the summer months than at other seasons of the year, and that, if there is any preponderance of cases in any season, it is rather in the winter and spring than the summer. Indeed, Dr. Röhl, of the Vienna Veterinary Institute, asserts that the disease is more frequent in mild than in hot summers, and that the only exceptions have been when the seasons were irregular or variable.

It has also been a popular superstition that the bite of an angry dog, or of one in rut, or of some other enraged animal, was likely to be followed by rabies. Fleming reports two cases mentioned by the Abbé Rozier, where hydrophobia was supposed to have followed bites of this kind. In the first case a man had bitten himself in a fit of rage, and in a second a soldier was bitten by his comrade. Dr. Camille Gros, as quoted by Fleming, records a case that occurred in the clinic of M. Tardieu which has been cited as proving the same fact. "An individual was bitten by an angry but not rabid dog. The wound healed in ten days. Afterward the subject became ill, symptoms of hydrophobia manifested themselves, he was brought to the hospital, and died in four days; at the autopsy the lesions present in hydrophobic patients were found. The premonitory symptoms and the progress and duration of the malady were the same as with them. From

this fact this author supposed that the bite of an irritated dog or one in rut might become momentarily virulent and cause rabies." However, this supposition is utterly untenable, and certainly nothing can be more erroneous or terrifying than the idea that the bite of a healthy dog may, under certain conditions, be followed by rabies. A wound or injury produced by the teeth of a non-rabid dog—one whose saliva does not contain the living organism, whatever may be its nature, which is the cause of rabies—can no more bring about the production of the specific disease which we call rabies than can the wound made by a sterilized knife.

This, with all other supposed causes, must be absolutely rejected. It must be admitted that there is only one evident and efficient cause for the disease—a contagium vivum—as to the nature or character of which we have at present no absolute knowledge, excepting that it must be a living matter capable of reproduction and multiplication when transferred to the living organism, and of there producing a specific disease manifested by varying symptoms in the different species of animals affected, and its presence or virulence can only be determined by the results produced when introduced into the blood of previously healthy animals. That it is exceedingly minute is proved by the difficulty experienced in its demonstration, and that it is a micro-organism belonging to the schizomycetes is rendered probable by the similarity of the disease to other communicable diseases known to be due to pathogenic micro-organisms of this class. Indeed, Dr. Herman Fol, of Geneva, in a recent communication to the French Academy, professes to have discovered the specific micro-organism of this disease—to have been able to demonstrate it in the neuroglia of the central nervous system—to have succeeded in cultivating it in appropriate cultivation media, and to have produced rabies in rabbits by inoculation with pure cultivations of this germ. In this communication he describes the material points in the results obtained in his experiments and the methods employed as follows. He says: "Like our predecessors, we have tried in vain to obtain a staining of some special organism in the cords from rabid animals by the ordinary methods, but

finally by the adoption of one method we have been able to reveal the existence of certain elements which are not present in healthy spinal marrows. This result was attained by the use of the method of hardening and coloring devised by Ehrlich and Weigert, and by making an absolute rule to examine only perfectly satisfactory sections, whose thickness did not exceed $\frac{1}{200}$ of a millimetre.

“The marrows should be immersed immediately after death in a solution composed of 2.5 gm. of bichromate of potassium and 1 gm. of sulphate of copper to 100 gm. of water. The sulphate of copper is important for the subsequent staining, and also because of its antiseptic properties, which guarantee that no new organisms gain access to the section during the process of hardening. The cord is afterward divided into short sections, so that they can be immersed in Weigert’s hæmatoxylin solution; they are then passed into absolute alcohol and oil, imbedded in paraffin, and a series of fine microscopical sections is made. These are then passed into Mayer’s fluid, decolorized in ferrocyanide of potassium, and mounted in Canada balsam. Similar pictures may be obtained, but less clearly defined, by subjecting the small sections of the cords to the vapor of osmic acid, and decolorizing in a solution of oxalic acid before imbedding.

“If these preparations have been decolorized with care, there may be seen in them groups of small globules similar to micrococci. These are situated sometimes in the lamella of the neuroglia, more rarely in the space in the cylinders between the portion stained deep blue and the sheath of Schwann, which is only tinted yellow. Sometimes these groups are found in the small cavities, which have a diameter less than that of the myelin fibers, the histological nature of which is not as yet understood. These granules are perfectly spherical, clearly defined, and stained a deep violet color. They are arranged in a definite order, and do not form chaplets. They are found in the form of a figure of eight (8), which indicates multiplication by division. Their diameter is about 0.2 of a micro-millimetre.

“If an appropriate cultivation medium is inoculated with a rabid brain, a development occurs, accompanied by a slight cloudi-

ness, which settles to the bottom on the fourth day. This deposit, when used for the inoculation of sound animals, produces in some instances a rabies which is very characteristic, excepting that the duration of the incubation period is much more prolonged than that following the employment of the virus which served for the original inoculation."

As a cultivation medium, a brain broth was used, usually that from sheep, as fresh as possible, and triturated with a little sterilized water and carbonate of potassium. The liquid, filtered at first through paper, is then passed through a Chamberland filter, and after this remains perfectly clear if all the operations have been carried on with sufficient care.

The method of trephining is not used, as being too complicated. The virulent liquid is injected by a pointed cannula carried along the conjunctiva to the bottom of the orbit, which is then made to pierce the lamella of bone which separates the base of the brain from the orbit. This method, according to Fol, has succeeded well, and is easy of application.

If a portion of the deposit which the cultivations present after four days is placed on a cover-glass, dried, and treated with the hardening solution, composed of bichromate of potassium and sulphate of copper, and is then colored and decolorized in the same manner as the sections of the cords, the same groups of micrococci are presented, and they have the same deep violet color. Rabies did not follow inoculations with cultivations more than six days old. He says: "It would be interesting to know whether this depends upon an attenuation of the virus, and whether the inoculated animals thus become refractory to rabies."

Pasteur had before described the presence of certain granules in rabid marrows; but Fol says: "In the want of precise descriptions, it is not possible for us to decide whether they are identical with the microbe which we have succeeded in coloring and cultivating. And as for the brilliant granules described by M. Gibier, they appear to be much larger than this microbe, which is not visible with a magnifying power of five hundred or six hundred diameters."

These statements of Fol were not favorably regarded in Pasteur's laboratory, on the grounds, first, that the methods which he describes as used for the cultivation of the germ have been repeatedly employed by M. Roux, Pasteur's first assistant, without any result; second, that he describes the germ found by him as being aërobic, while, from the nature of rabies and the presence of the contagium vivum in the nervous system, it seems far more probable that it is an anaërobic or facultative anaërobic germ; and, third, because he has only produced rabies in rabbits, in which the disease manifests itself by no characteristic symptoms, as is the case in dogs, and in which rabies may be easily confounded with the various forms of septicæmia.

The studies of M. Pasteur upon rabies up to the time of the meeting of the International Medical Congress in 1884 are well known, through the communication presented at that time, and through numerous previous communications to the French Academy. It is scarcely necessary or possible to consider these communications in this short paper, as they in large part report observations which have no important bearing on the present question, and present lines of investigation quite different from that described in his last report. However, it is but fair to state that some of the conclusions arrived at in his earlier work on rabies have not been confirmed either by his own later investigations or those of other observers, and are in some respects opposed to the results recently reported. It must be admitted also that, unfortunately, in his last communication, as in some of his other more recent communications upon rabies, he has not discussed the questions so much in detail as could be desired, nor has he given definitely the number or character of the experiments upon which his conclusions and the general principles drawn from them are based. The failure to do this will render it impossible for any other investigator to repeat or confirm his experiments, and without such confirmation from a thoroughly reliable source there will of necessity be much reserve among scientific men about the acceptance of such important and far-reaching principles as are involved in his method for the prevention of rabies.

It may not be uninteresting here to first recall briefly the former method of Pasteur for rendering dogs refractory to the disease, as presented in his communication to the French Academy on May 20, 1884. This first method was, briefly, as follows: The rabic virus obtained from the spinal cord of a rabid dog was first attenuated by passing it through a series of monkeys, and then, as the virulence is increased again by its transmission through rabbits, it was graded up to the desired degree of virulence by the subsequent inoculation with it of one or more rabbits. In rendering dogs refractory to rabies they were first inoculated with a virus obtained from the *first* of the *rabbits* inoculated from the *last* of the series of *monkeys*. At the same time with the inoculation of the dog a *second* rabbit is inoculated. The dog receives his *second* inoculation from the virus obtained from the *second* rabbit, and at the same time a *third* rabbit is inoculated with this same material. The *third* and last inoculation of the dog is made with the virus obtained from the *third* rabbit. "At this time," Pasteur says, "the dog has been rendered entirely refractory to rabies." In this same communication, in 1884, he says: "I believe I can surely bring about a refractory state in the human being before the mortal disease appears in consequence of a bite."

(*To be continued.*)

VENEREAL DISEASES IN THE LOWER ANIMALS.

Read by Professor WALLEY before the Scottish Metropolitan Veterinary Medical Society.

MR. PRESIDENT AND GENTLEMEN.—In bringing before your notice the subject of "Venereal Disease in the Lower Animals," I may state at once that I have several objects in view. *The first of these is to inquire as to what extent our domestic animals are liable to such infections. The second is as to whether we are justified, in the present state of our knowledge, in assuming that they suffer from conditions allied to those which are characteristic of syphilis in man. The third is to direct attention to a method of treating intractable venereal sores in the dog which is both sure and effectual.*

In reference to the first of these questions I may remind you that veterinary practitioners in this country are well acquainted with the fact that several of our domestic animals are sometimes affected with the disease known as *gonorrhœa* or, as it is termed in cows, "bull-burnt."

This specific form of urethritis, for such it is, occasionally makes its appearance in herds under such circumstances as to warrant the expression of an assumption that it is in such cases generated autogenically.

I have myself seen it appear in herds in which neither the male nor the female members had ever been allowed to come in contact with other animals for procreative purposes, and I am well aware that other practitioners have seen it arise under identical conditions. In the matter of the dog I have frequently had cases brought to me in which the owners of the animals have declared that they (the dogs) had *never been in contact with any female for copulative or other purposes*. When once the disease arises in the male its spread is not difficult to explain, and I have notes of some cases in a number of mares which came under the observation of one of my late pupils, Mr. Barclay, of Dunfermline, and which were all traceable to infection from one stallion, who, it was subsequently shown, was the subject of the malady.

In France there exists a well-known form of venereal disease, known as "La Maladie du Coit." Happily—at least, so far as I know—the equine species in this country is exempted therefrom. Neither have I ever seen any such form of disease in the sheep or in the pig.

As to how far *gonorrhœa* may be looked upon as a specific disease, I may first direct your attention to the fact that the literal meaning of the word used to designate this class of affection is totally out of accord with its proper application. It signifies an excessive flow of semen—a condition sometimes observed in young vigorous dogs when excited by the near proximity of œstral bitches, and which, owing to the fact that it is accompanied by tumefaction of the sheath and swelling of the testes, is confounded with the affection usually termed *gonorrhœa*. The use of the term is, however, warranted by custom and I do not feel disposed

to cavil at its application to the form of disease under consideration.

As to the specificity of gonorrhœa, I may remind you that the researches of those engaged in inquiries as to the nature of the disease in the human subject have not resulted in any definite issue. True, the statement has been made that a micrococcus has been detected in the discharge of gonorrheal urethritis, and in those of gonorrheal ophthalmia, identical in its characters from both sources; but there are those who assert that in urine which has undergone fermentative changes a micrococcus, recognized as *M. urinæ*, is always present; further, inquirers—MM. Lepine and G. Roux—have recently drawn attention to the fact that when cultivations of this now well-known micrococcus are introduced into the urethral canal of male animals, and retained there for a short time, a specific urethritis is established, which extends to the bladder and kidneys, and produces death, with reproduction in large numbers of the micrococcus in the urinary products; and of still greater importance is the further statement that healthy females confined in cages with these experimentally-infected animals become the subjects of identical conditions, and die with similar urethral, cystic and renal lesions well developed.

Now, if these altered micrococci were the actual cause of gonorrhœa, we should expect that in old-standing cases the bladder and kidneys would become diseased; such, however, is never observed—at least in my experience. That specific urethritis in animals is identical with that of man is proved by the fact that in dogs we not infrequently see well-marked gonorrheal conjunctivitis produced by contact of the urethral discharge with the conjunctivæ. The infection is conveyed by the animal licking its penis, and subsequently one of the hind feet, from which the virus is passed to the conjunctiva in the act of scratching. Mr. Alex. Grey informs me that some years ago he saw a monkey—which had contracted the disease from handling contaminated lint thrown away by a sailor on board ship—with gonorrheal conjunctivitis, the infection having been conveyed to the membrane by the creature's own hand.

So far, then, we see that gonorrhœa affects the horse, the ox,

the dog and the monkey; that in these animals its course is similar to that which follows in man. But what about our second query: "Do the domestic animals suffer from syphilis?"

The great characteristics of syphilis are—firstly, that it is a disease running a chronic course; secondly, that its most prominent lesions are indolent ulceration of mucous membranes and skin, with chronic enlargement and induration of lymphatic glands and ulceration of the skin covering these glands.

Do we meet with such lesions in veterinary practice? Most certainly yes—in the dog at least. Are they of a syphilitic nature and origin? I will answer this question by expressing the opinion that they are of that nature, and I think I am warranted in so doing by the characters presented by these lesions and by their course.

I am quite aware that objection may be taken to my conclusions on the ground that the chronic lesions seen in animals are only results—or *secondary symptoms*, if you like—of gonorrhœa. So used pathologists to consider the lesions of syphilis in man; but they have now come to look upon them as being totally different both in nature and in cause.

I know it has been said that the *chancre* of the dog differs materially from that seen in man, in the fact that its edges and base are less indurated. Granted this to be the case, may not, I ask, any slight difference in character be due to differences in structure (histologically) in the membranes in the two animals?

A chancre makes its appearance on the penis of the dog; it gradually extends its bounds; other chancres form, and in some instances the primary and secondary sores coalesce; from the surface of these sores a puriform fluid, ichorous and infective in its character, is discharged; this fluid sets up a degenerative inflammation in the skin of the thighs, the abdomen, the chin, and in fact in all parts with which it comes in contact. These sores do not yield to the local application of caustics, and in many cases are affected only to a limited extent by the internal administration of potassic iodide and mercury, unless, indeed, these drugs are pushed to a dangerous extent.

In the course of time the dog begins to arch his back, and the

motion of the hind legs becomes stiff and the gait straddling. By these signs the attention of the practitioner is directed to the inside of the thigh, and he there detects a *bubo* identical in its characters with that seen in man, and, like it, ultimately associated with chronic ulceration of the skin covering it. If these lesions are not syphilitic, what are they? I leave those who deny that the disease exists in the lower animals to answer the question.

In reference to the treatment of those important lesions, *bubo* and *chancre*, I may observe that the former is much more easily dealt with than the latter. In my experience the free inunction of iodine ointment, with the application of nitrate of silver to ulcerated surfaces when such are present, quickly produces resolution, but in obstinate cases I should advise iodine irrigation or extirpation of the tumor; no harm could result from the adoption of the latter course, and seeing that there is great danger of the gland becoming a centre of infection to the system it would be the wisest course to adopt.

In the treatment of chancrous ulceration of the penis we have an infallible remedy, if I be permitted to so designate it, in castration. I am perfectly well aware that some of my scientific friends will utter an exclamation of surprise and horror when this statement meets their eyes, but one fact is worth a dozen theories, and however unscientific and unsurgical the operation may at first sight appear, it is all the same an absolutely effectual and perfectly safe cure. In the case of valuable stud dogs the removal of the testicles would, I need scarcely say, be a matter of grave importance, as its adoption would mean annihilation of the procreative function; but in dealing with animals in which their use for stud purposes is only of secondary importance, the operation should unhesitatingly be performed if other remedies fail in effecting a cure. The first occasion on which I adopted the treatment in practice was in October, 1873, at which time I had under my care a terrier of nondescript breed (much prized as a companion by his owner) suffering from venereal sores on the penis and on the skin of the abdomen and thighs. After giving the usual constitutional remedies, as potassic iodide and

mercury, and the usual local applications, and nitrate of silver and sulphate of copper, a lengthened trial, I determined upon trying the effects of castration. My reason for performing the operation was that I observed whenever I manipulated the animal chordee became very marked, and this was followed by extreme vascularity of the penis and particularly of the tissues involved in the ulcerative process. In my own mind I came to the conclusion that if priapism were prevented this periodical hyperæmia would be done away with and *rest* insured to the cells of the diseased parts.

The operation was performed, the effects of it surpassed my most sanguine expectations, and the dog was quickly discharged cured.

(*To be continued.*)

WHY PASTEUR'S VACCINE FAILS TO PREVENT HOG CHOLERA.*

BY D. E. SALMON.

In my former communication on this subject was given an account of an experiment made by the Bureau of Animal Industry with Pasteur's vaccine from which we concluded, some time in advance of the termination of the Nebraska experiment, that this vaccine could not be used to prevent hog cholera in the United States. In the first place, whether this vaccine is reliable when it leaves the laboratory of the great French chemist, or not, it certainly was not in a condition to give reliable results when it reached us, although it had probably not been prepared longer than three weeks when it was used. The first vaccine was of about the strength which we expected it would have, but the second vaccine was weaker than the first, instead of being stronger, as it should have been. This fact we do not understand, and it seems to us that, as both were subjected to the same journey, we are justified in entertaining the suspicion that they did not have the proper relative conditions of vigor when they left France. At all events, the vaccination was a failure, and the vaccinated hogs

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contracted hog cholera, when exposed to it, just as readily and just as severely as others who had not been operated upon.

The great question of interest, and the one which it is the object of these papers to consider, is: Why does Pasteur's vaccine fail to prevent hog cholera? Dr. Liautard evidently believes that it is owing to the time required to bring the vaccine from Paris to America. Considering, however, the activity of the first vaccine, which evidently multiplied in the body of one of the vaccinated animals, since the germs were found in its internal organs at the time of its death, four days after vaccination, and considering also that two of the pigs were given at least twelve times the prescribed dose, it would appear that at least some degree of immunity should have been shown by these animals.

Dr. Liautard's explanation does not appear to the writer to be any nearer correct than that of Dr. Gerth; indeed, unless I am greatly mistaken, both of these gentlemen are radically wrong in their conclusions that the French disease, called by Pasteur *rouget*, is identical with the American disease which we call hog cholera. I explained this matter quite fully at the meeting of veterinarians and members of the State Sanitary Commissions held in Chicago last November; and Dr. Gerth evidently had my view in mind when he stated so positively that the germ in the Pasteur vaccine was identical with that found in hogs affected with hog cholera in Nebraska. The ridiculousness of such an assertion, when we come to consider the investigations that were made, would be amusing if it were not for the serious consequences which follow from deceiving the public with such rash and unreliable statements.

To understand the contested questions in relation to the germs of the swine diseases in France and America, it is necessary to refer briefly to recent European investigations. Pasteur's first paper on *rouget* appeared in 1882, and he then described the germ as having the form of a figure eight and resembling the fowl cholera microbe. In 1883 he confirmed these statements. From these papers we and many others were led to believe that he had discovered the germ of this disease to be one of the spherical, globular, or bispherical species of bacteria; that is, a micrococ-

us. He even went so far as to admit that the bispherical microbe described by Dr. Detmers in the *American Naturalist* was identical with his germ. After this we were, of course, very much surprised to learn from Europe, through the correspondence of Dr. Sternberg, who had just visited Pasteur's laboratory, that Pasteur was sending out an elongated, rod-shaped organism, in other words a bacillus, and that he had apparently discarded the micrococcus which was first described. Later we received the work of Lydtin and Schottelius, giving full details of their very thorough investigations of Pasteur's vaccine and of the German disease called *rothlauf*, which is believed to be identical with *rouget*. They not only described, but figured the germ and demonstrated it to be a peculiar bacillus to which Pasteur's description of the germ originally found does not apply.

The vaccine which Dr. Liautard obtained for us from Pasteur's laboratory contained these delicate bacilli which were figured by Lydtin and Schottelius, and which had also been described by Loeffler and Schutz as causing the *rothlauf* of German swine. This microbe was very easily demonstrated by us not only in the vaccine liquid, but also in the blood and internal organs of the mice and the pig which died after inoculation with it. There is consequently no opportunity left at this time for any one to contest the fact that the active principle in Pasteur's vaccine is an elongated filament or bacillus, which is so distinct in its shape that it could not be mistaken for a micrococcus.

This microbe, which is probably the cause of a more or less serious and fatal disease of swine in Europe, is very delicate and difficult to see even under the best microscopes unless the preparations are suitably stained. The vaccines contain a relatively small number of these germs, and unless mounted and stained they are very easily overlooked. The liquids and tissues of animals which have died from this contagion contain the germs in still smaller number, and to identify them without staining is next to impossible.

Now, the question is, how were the microscopical investigations made in Nebraska? It is very well known that no one connected with the investigations there had previously been engaged

in the study of disease germs, and consequently it is very certain that the material was not at hand to make a satisfactory investigation even if the microscope was as perfect a one as can be made. I have taken some trouble to collect information in regard to this matter; and from various sources I learn—first, that no stained preparations were made for examination; secondly, that the liquids examined were gathered from the dead animals without any precautions for excluding atmospheric germs; thirdly, that none of the germs were cultivated for study; fourthly, that the bacillus, which is the essential element of Pasteur's vaccine, was not seen at all, but was entirely overlooked, and a contaminating germ of very different appearance—in other words a micrococcus—was considered to be the Pasteur germ, and the conclusions were drawn from this. The germs found in the hogs sick in Nebraska were also micrococci, and consequently could not be the same as those which Pasteur believes to be the cause of the swine disease of France.

Having been engaged in the microscopical study of swine plague for the past eight years, I think I can say, without laying myself open to the charge of egotism, that I know something about the germs which exist in the bodies of sick hogs, and also something about the proper methods of investigation and the difficulties in the way of their practical application. From this knowledge I have little hesitation in concluding that if the germ found in the affected hogs in Nebraska was a micrococcus, as those who saw it believed and as I have every reason to believe, then Dr. Gerth neither saw Pasteur's germ in the vaccine nor the true germ of hog cholera in the specimens examined from the diseased hogs. I see no reason to doubt, therefore, that the Nebraska experiments were a failure from every point of view; the vaccine was too old to give results of any value, and the microscopical examination failed to reveal the pathogenic germs.

This result of such incomplete and brief researches is not to be wondered at; indeed, it would have been next to a miracle for any one to make sufficiently brilliant discoveries to settle such difficult and contested questions in so short a time, with so little work and with so few facilities. The remarkable part of

It is that Dr. Gerth should come before an intelligent public and make these preposterous claims with such material as he had to base them upon.

The references to Prof. Bessey in the report under consideration seem to have been made without his desire or consent. This gentleman is a scientist whose attainments and opinions are worthy of great respect; but he is a botanist, has never been engaged in swine-plague investigation, and makes no pretensions to being an authority on animal diseases. The material in this case was taken to him because he was the possessor of a good microscope. He placed it under the instrument for examination, and when he says that the germs revealed were micrococci I have confidence that his statement is correct.

That the general student of botany, or even of bacteriology, should be puzzled to know what particular germ is the cause of American swine plague is not surprising. The whole science of disease germs is new, and is passing through a transition period. Two widely different germs have been lately described in Germany as producing contagious swine diseases—one of these, the germ of *rothlauf*, is identical with Pasteur's bacillus; the other is entirely distinct, and is said to produce *schweineseuche* (swine plague). In France two or three different germs have been described, but it is not yet certain whether more than one disease has been studied in these investigations. In the United States a number of distinct germs have also been referred to by investigators as the cause of American swine plague. These different opinions have led to much confusion, and no one but those who have been continually at work on this question can have an intelligent opinion of its present condition. Probably more hard work has been done in regard to this disease, and more experiments have been made by the Bureau of Animal Industry at Washington than anywhere else in the world, and we expect to settle the contested questions in a short time by the presentation of evidence of the most convincing character.

In the May number of the *AMERICAN VETERINARY REVIEW* Dr. Gautard makes some additional remarks in regard to hog cholera which we find it convenient to take as texts for the different

points discussed in this communication. He says; “It *has been thoroughly and without doubt* demonstrated that inoculation is the *only* reliable measure of prevention. It is true that before inoculation can be introduced into this country we must have a definite and satisfactory answer to an important question furnished from one source or another, and must settle the query, ‘what is hog cholera’—is it the same disease here with that which prevails in Europe? Veterinary authorities on this side of the Atlantic seem to disagree on this important point.” Are these not rather contradictory sentences to occur side by side in the same paragraph? If veterinary authorities are not agreed as to whether *rouget* and hog cholera are the same disease there must be very good reason to doubt if Pasteur’s investigations apply at all to hog cholera. This being the case, there has been nothing whatever *demonstrated* as to the value of inoculation as a means of preventing hog cholera; in fact the only experiments made with Pasteur’s vaccine have signally failed, and we are, consequently, very much surprised that one so able and so conservative in his views as Dr. Liantard should write that inoculation had been demonstrated *thoroughly and without doubt*, not only to be a reliable measure of prevention, but *the only reliable measure*. We fear that the Doctor’s enthusiastic belief in the measures proposed by his great fellow-countryman has led him to make somewhat exaggerated claims in regard to his measures—claims which the “cold logic of facts,” as Dr. Gerth puts it, will hardly sustain.

This naturally brings us to a consideration of the differences between the swine diseases of Europe, which Dr. Liantard unaccountably refers to as one disease, and between the diseases of Europe and the one contagious disease which has been described as affecting American swine. To give a clearer idea of his views I quote: “Is the *rouget* of France, the *schweineseuche* of Germany, and the pneumo-enteritis of England and the cholera of America one disease? If we are to accept what has been written by competent authors in all these various countries there does not seem to be room for a doubt. The symptoms and the lesions of which we read descriptions by French, German, Eng-

English and American authors are almost literally the same. The reports of those who have seen it in these various countries contain no essential differences in their accounts of the different nationalities of the different breeds. Notwithstanding this, however, statements of the opposite opinion have been made public, and a number of instances, as of course there will always be many minds among many men. We who have seen it in both France and America, and some of our friends who have observed it in Germany and the United States also, are in no doubt respecting their similarity, and are so strong in our consideration that we cannot see any other way to recommend in the prophylaxy of this scourge of swine than inoculation."

Recognizing the fact that this paragraph is aimed at the writer, as the only one who has denied the identity of the *rouget* of France and the hog cholera of America, the challenge implied in these lines is unhesitatingly accepted, and an attempt will be made to show either that Dr. Liautard and the gentlemen who share his view are not well informed in regard to the recent European literature on this subject, or that they have been able to obtain information which is not accessible to the writer. Should they decide that the latter alternative is the correct one we shall be happy to have them present their evidence.

In the first place it is well to remember that French veterinarians have described two or more epizootic diseases as affecting pigs, and a very slight examination of their literature shows that even now there is the greatest confusion in regard to the whole subject. Bénion, who is the author of the only complete scientific treatise on hog diseases that has appeared in recent years in France, classes *rouget* and *rougeole* together and calls it a skin disease; he also describes a different disease, which he calls charbon, but as recent investigations seem to demonstrate that the hog is not subject to charbon, this second disease is of an undetermined nature. Zundel, whose knowledge of this subject will hardly be questioned, treats of *rouget* under the heading of epizootic erysipelas of the pig, and says that *rougeole* is easily distinguished from it; he also refers to still another disease which he calls charbon. Cornevin, in his work on *rouget*, finds it neces-

sary to admit a second disease and calls it *septicemie gangreneuse*. Dr. Paul Cagny, who was sent by Pasteur to carry out the vaccinations in Baden, says in a recent letter to Dr. Cornil: "It is necessary in the first place to indicate that two different bacterial (*microbiennes*) diseases have been confounded—one is certainly the *rouget* caused by the short and fine microbe described by Pasteur and Thuillier and for which the preventive vaccination should be employed; the other is caused by a large and long microbe discovered by Klein, of London." In Germany there is the *rothlauf*, now admitted to be identical with *rouget*, but it is still an open question if the *schweineseuche* is the same disease. Consequently, if there are two or more different diseases in Europe they cannot all be identical with our hog cholera; and if it should happen that we have confounded two or more diseases in this country, then Pasteur's vaccine could only prevent a part of our losses, admitting that we have a disease identical with *rouget*.

As so little is settled about the swine diseases of Europe we find it necessary in any comparisons of value to take the characters of *rouget*, as the malady is produced by the Pasteur virus, or by contagion from a disease recognized by competent authority to be the same. We may compare the characters of that disease with our hog cholera under the following heads:

1st. *Incubation*.—The period of incubation—that is the period which elapses between exposure to a contagion and the appearance of the first symptoms of the malady—is certainly one of the most important characteristics of a contagious disease. With our hog cholera this period varies from five to eighteen days in summer and from ten to twenty-one days in winter; the average is seven or eight days in summer and two weeks in winter. This refers to cases of disease produced by exposure to infected pens or to sick hogs. The symptoms appear somewhat sooner when animals are inoculated, but the period is even then very rarely as short as four days, and is generally twice this length. Now taking the experiments of Cagny in France (*Bul. Soc. Cent. de Med. Vet.*, 1885, p. 151) and Lydtin in Germany (*Die Rothlauf der Schweine*) we find that when pigs are exposed to the contag-

ion of *rouget* they sicken in from one to six days, the average being from two to four days. When inoculated some were sick the same day; the average incubation was, according to Cagny, less than twenty-four hours, and according to Lydtin less than forty-eight hours. The period of incubation consequently differs remarkably in the European disease from what is seen in our hog cholera.

2d. *Duration of Disease*.—Animals affected with hog cholera are usually sick from one to two weeks before they die. Occasionally the plague is more rapid in its course and death occurs within three or four days, but the average period of sickness is not less than eight or ten days. With *rouget*, according to Lydtin, the animals are only sick from thirty-six to sixty hours, or an average of about two days. Here again we see a most remarkable difference between the two diseases.

As this letter is already long I will take up other points of difference in another communication.

(*To be continued.*)

AMERICAN VETERINARY COLLEGE.

HOSPITAL RECORDS.

By R. WEIR, D.V.S., House Surgeon.

ADENITIS AND ITS RESULTS.

On Sunday morning, April 11th, 1886, there came under my observation a chestnut gelding, eight years of age, fifteen hands two inches high, that had been discharged about ten days ago, as convalescing from an attack of pleuro-pneumonia.

The symptoms now exhibited were noisy breathing, discharge of a purulent character from both nostrils, swollen and painful intermaxillary glands, temperature 104 2-5 degrees F., respirations and pulse almost normal in number, and almost complete loss of appetite: upon which a diagnosis of adenitis was made, and the following treatment given: Fomentations and hot poultices to the enlarged glands, fumigations of steam; all to be continued until the abscesses were all opened. Administered internally stimulants three times a day.

After a few days the breathing was normal, pulse and respirations were about the same, and the temperature varied from 102 to 104 2-5 degrees until April 26th, when it rose to 106 2-5 degrees, pulse 68, respirations 32, and the appetite not improving. He was now given quinine twice a day, stimulants, tonics, milk, hay tea, gruel, etc.

During all this time four abscesses in the intermaxillary space were opened and had again healed, yet the condition of the animal was not improving, and on examination dullness was found over the lungs, and it was thought that abscesses were forming in the lungs.

The first of May found him with a temperature of 101 degrees, respirations 24, pulse 48, and purging freely, for which opium was given with success in checking it.

The weakness now increased very much; nutrition was given in drench and by rectum, but the weakness continued until May 9th, when he died.

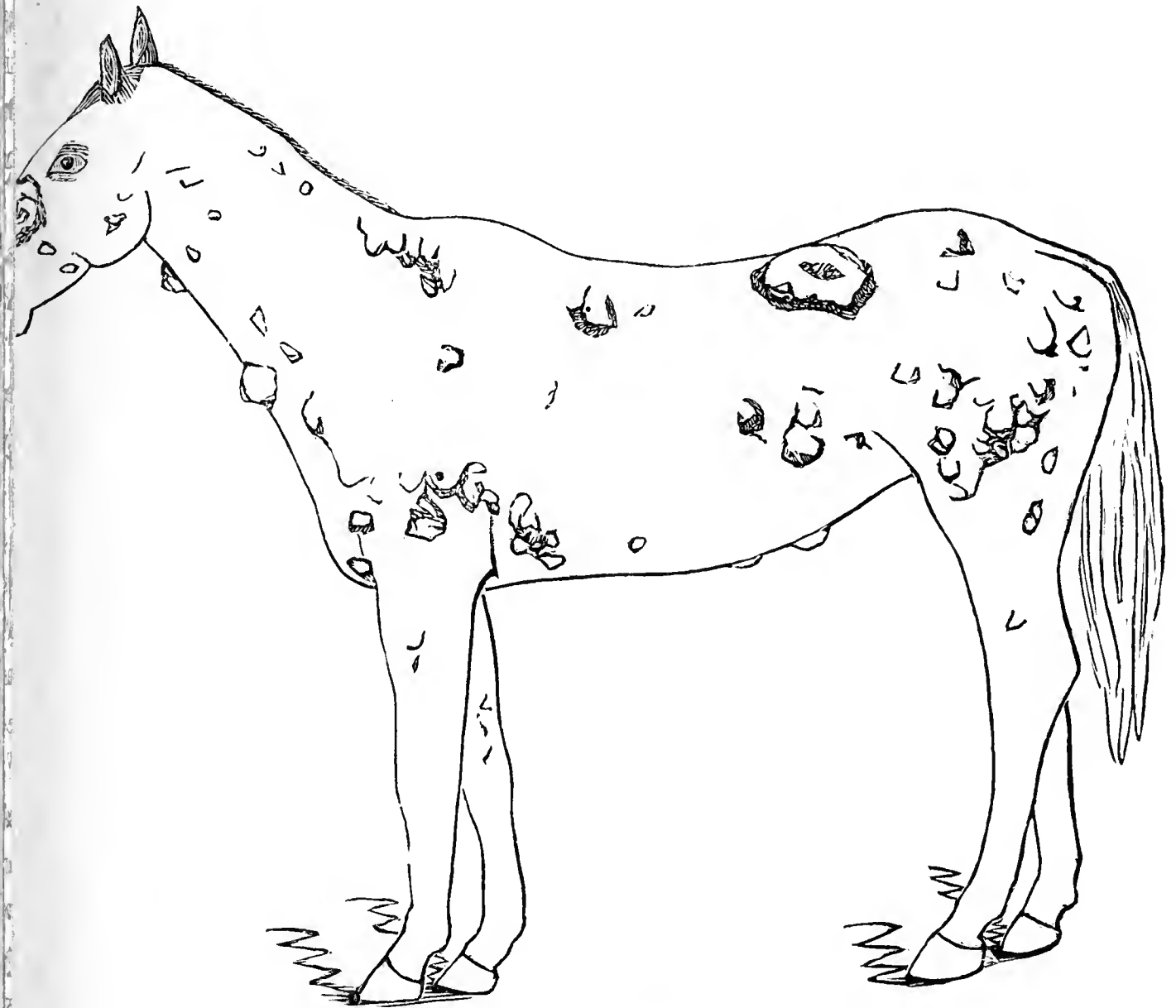
The post-mortem examination held the same day showed: Small enlargements in the intermaxillary space, enlarged prepectoral glands, pleurisy with effusion, old costal and pulmonary adhesions, and lymph patches on both; diaphragmatic pleura was highly inflamed; right lung edematous and of recent occurrence; left lung showed a portion at the base that was nearly normal; the apex showed pneumonia, and in the middle portion was a large abscess occupying about one-fourth of the lung; heart normal except in the right side was found an ante-mortem clot that extended into lungs; abdominal cavity contained a large quantity of fluid; beginning of peritonitis and mostly of the small intestines; the kidneys slightly congested; spleen highly congested; the liver of a nutmeg appearance and containing two large abscesses from which escaped laudable pus slightly greenish in color; and the mesenteric glands all greatly enlarged.

LEUCOCYTHEMIA OF THE SKIN.

BY J. A. WALRATH, D.V.S., House Surgeon.

Toward the latter end of the spring session a bay mare was brought to one of the free clinics covered with a great number of

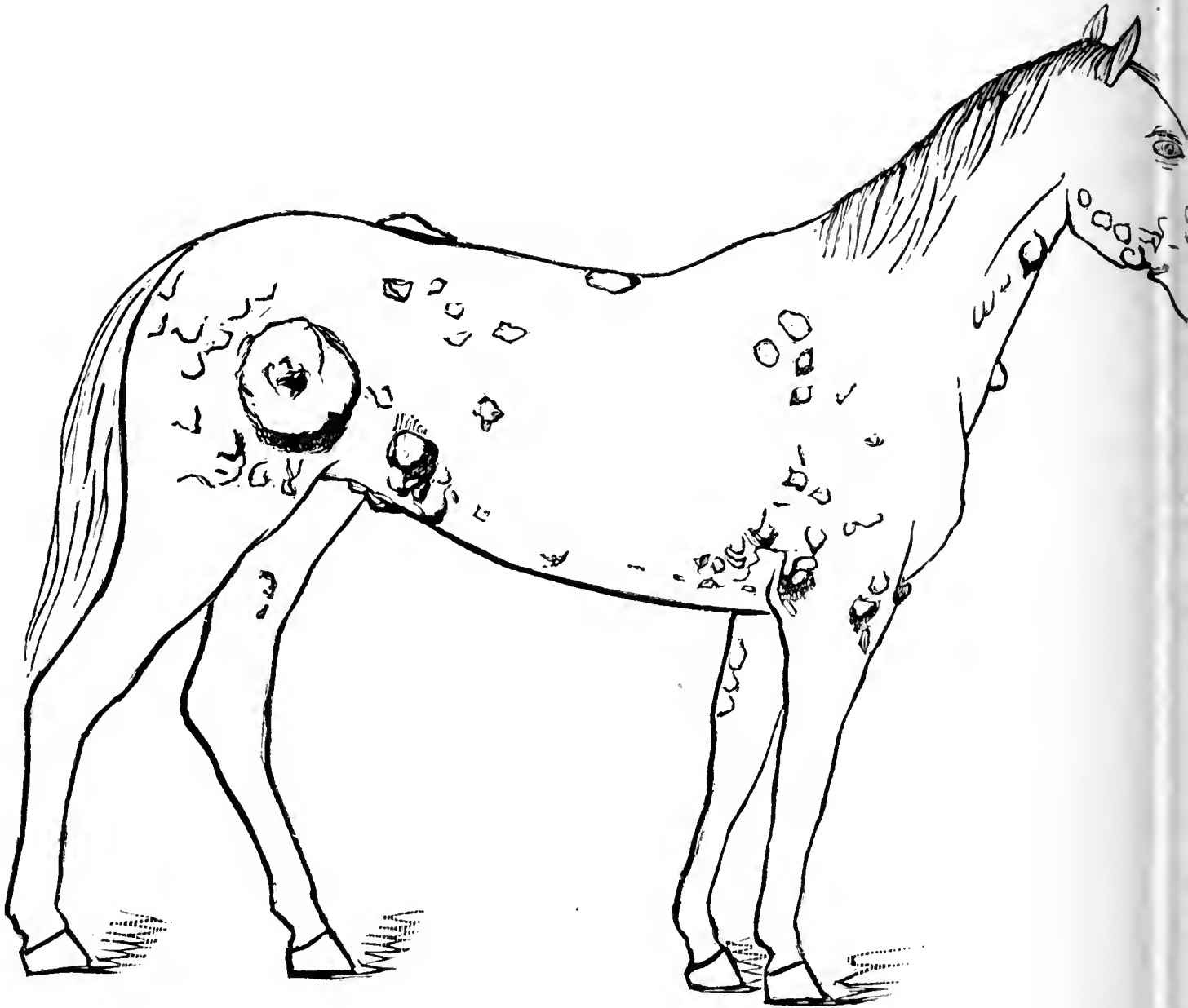
tumors, varying in size from a walnut to a very large apple. It being a case of much interest and of comparatively little value as a working animal, an attempt was made to purchase her for clinical observation; the owner however, refusing the offer, she was lost sight of until May 28th, when she was once more brought



(Near Side View of a Mare with Gangliona Leucocythemia.)

back to the college, the owner now being only too glad to get rid of her, fearing arrest by the officers of the "Society for the Prevention of Cruelty to Animals," as one of the largest of these tumors, situated on the head in the right facial region, about three inches below the eye and extending downward to about an equal distance above the nostril, was denuded of skin and presented a raw granulating surface some five inches in length and

four in width, and her general appearance was such as to attract the attention and sympathy of passers by. The animal had great difficulty in breathing, and roared continually while moving, as some of these growths were located in the upper air passage, and so materially constricted these channels that suffocation was



(Off Side View of the Same.)

threatened at times when the animal's pace was hurried. Other enlargements were noticed over nearly every portion of the head, but principally on the sides of the face, on the parotid region, around the nostrils, and in the intermaxillary space. Here in this latter place they were so thick as to have the feeling of large marbles under the skin. Beginning in the jugular groove, they seemingly followed the direction of the lymphatic glands, as

clusters of them were scattered over the outside of the arm, on the chest, between the forward legs and in the axilla. Then, beginning opposite the point of the elbow and running backward on the body, covering the abdomen and flanks, as well as the inguinal region, and extending upward on each side of the perineum to the base of the tail, around which numbers of them were growing. A considerable number was also seen on the hips, on the inside and outside of the thighs. And two very large ones, situated, one on the right side in the triangular space comprised between the external angle of the ilium and femur, being round in shape and standing out from the skin an inch or more, blackish in color and devoid of hair over its outer face. The other one was on its left side, high upon the lumbar region, about a hand-breadth from the vertebral column, and extending from the last rib backward about eight inches; this one was rather oblong in shape, but had the same general peculiarities as the one on the opposite side. These swellings were hard, not painful to the touch, and seemed to be in the connective tissue under the skin, as they could easily be displaced by manipulation.

The total number of these growths visible when she entered the hospital was about one hundred and fifty. Her temperature and pulse were normal, the appetite good, coat sleek, and apparently in good health, and suffering no inconvenience from them except in respiration. After her admission she was placed under observation, and was exhibited to many veterinarians and physicians. One prominent among the latter was asked to examine the blood under the microscope, to determine if the relative proportion of white to red cells was increased. After drawing some blood and making a hasty examination, he concluded that the white cells were not in excess, and that the blood, as far as he had gone, was normal.

The appearance presented by the blood when allowed to stand a few hours in a closed test tube, was somewhat as follows: it separated into a clot of a very deep bluish purple, over which was seen the serum of a light straw color, very thin in consistency and transparent. Each of these different portions of the blood occupied about an equal space. In the centre of the serum

another clot of a faint red hue extended upward from the purple to within about an inch of the top of the fluid; this last clot was cylindrical in shape and surrounded on all sides by the liquid serum.

Not being satisfied with the results obtained from the first examination, measures were taken for a more complete and careful comparison of the vital fluid. With this in view, a small quantity was taken to Dr. T. M. Prudden, "Director of the Pathological Laboratory of the Alumni Association of the College of Physicians and Surgeons," and on June 12th the following letter was received from that gentleman: "I have made 120 counts of the blood, and the average result is 1 white blood cell to 265 red."

The animal had at this time been here a little over two weeks; the swellings had been gradually increasing during the time; slow it is true, but still enough to convince the observer that they were developing both in size and numbers, as several were noticed now that did not exist when she was first admitted. The large one referred to as being on the right side, seemed hot to the touch, and when on the 13th the animal was destroyed for a post-mortem examination, the temperature of this one was taken by making an incision through its thickness and inserting a thermometer, which registered $101\frac{2}{3}^{\circ}$, or $1\frac{2}{3}^{\circ}$ higher than her bodily temperature had been since she had been under observation. This tumor when enucleated weighed four pounds, measured two feet in circumference, and was four inches thick. The other large one when taken out weighed three and one-half pounds, measured the same in circumference as the first one, and was three and one-half inches in thickness.

The septum nasi was also the seat of two of these growths; one located well forward near the entrance to the nasal cavities, the other farther back, directly in the middle of the septum, projecting on either side of it to quite a distance, which readily explained the cause of roaring that was so marked during life. It was also hoped on post-mortem to be able to still further confirm the diagnosis that had been made previous to the examination of the blood by some important lesions of certain of the external organs, but after a most diligent search no pathological changes

were observed in any of them. Even the spleen, which is said to be always affected in this trouble, was apparently perfectly healthy and showed not the slightest trace of disease. Notwithstanding the negative result obtained from the post-mortem, the condition of the external manipulations with the actual count of the blood cells are sufficient to establish the diagnosis.

EXTRACTS FROM FOREIGN JOURNALS.

OBLITERATION OF THE POSTERIOR AORTA IN A HORSE.

BY M. PIRL.

This is a case of obliteration by stenosis, of the posterior aorta, with the continuation of the circulation by collateral branches, in a pony fourteen years old, which died almost suddenly after a sickness of a longer period of time than usual, and at the post-mortem of which unexpected lesions were found. The heart was considerably hypertrophied, the left ventricle especially, the walls of which were four and a half centimeters in thickness. The cardiac envelopes and the valves remained healthy. The posterior aorta measured thirteen centimeters in circumference, and was one-half centimeter thick in its walls. These dimensions existed in a length of twenty centimeters from the heart, the vessel then becoming more and more retracted, until it represented a thin cord of the size of a small finger, upon a length of five centimeters. This cord throughout was entirely solid, not allowing the introduction of the finest bougies. The arterial wall was weak and extraordinarily thin. Further on, the aorta was dilated, and its walls increased in thickness. Beyond this, two aneurisms were found containing parasites, surrounded by clots of blood adherent to the vascular walls, which were partly calcareous. Towards the end of the aorta were numerous transversal abrasions of the internal coat, leaving the middle layer unprotected and exposed. Several vessels, of the dimension of the carotid, escaped from the aorta in front of its contracted part, and carried the blood to the thoracic and abdominal organs, following the course of the artery they replaced. The intercostal arteries presented numerous irregularities, and the internal thoracic, largely developed, offered in

several places sacciform dilatations. A similar disposition existed upon all the arteries rising from the anterior aorta, as well as in the dorsal branches of the intercostals. On a level with the tenth dorsal vertebra there was an artery as large as a finger.

Taking into consideration the various lesions observed, the author believes that all the alterations originated from the lesions of the posterior aorta. The retracted portion of the vessel probably corresponded with an aneurism which was cured by slow and progressive obliterations; the diminution of permeability, and afterward the complete obliteration of the aorta, had given rise to a constantly increasing obstruction of the circulation; the arterial pressure had increased forwards, and had been followed by the hypertrophy of the left ventricle, as well as the dilatation of the vessels directly under its control, and consequently, the formation of a collateral circulation. This supplemental circulation by anastomotic breach may be of no great importance, where the obliterated vessel is small, but when the artery is such as the aorta itself, it becomes an exceptional phenomenon.—*Annals de Belgique*.

ACTINOMYCOSIS OF THE SPERMATIC CORD OF THE HORSE.

BY M. JOHNE.

As far back as 1819, Rivolta and Micellone had observed the presence of a micromycete in the tumors of the spermatic cord of the horse. This parasite presented itself under the appearance of small granular masses, whose structure greatly resembled the radiated disposition of the bovine actinomycosis. Its constituting elements, however, were much simpler, consisting only of large granular cells, the threads and granulations in mass being absent. For this reason, Rivolta classified this parasite in a special gender which he named *discomyces equi*.

Subsequently, Professor Johne, who ignored the observations of Rivolta, observed the presence of actinomycosis in several cases of the spermatic cord. He designated this form of the affection under the name of "*chronic mycotic funiculitis, or actinomycotic.*"

Out of thirteen cases of funiculitis operated for by Siedamgrotzky and by Johne, four belonged to this category.

Two other observations of the same kind are recorded. One is recorded by Siedamgrotzky; but in this case, the parasite was represented only by the raspberry form, or grouped masses, whose rounded elements formed in gathering together, spherical lobules, resembling very much small acini glands. Johne considers these to be a peculiar micrococcis, having no relation to the bovine actinomycosis; but he attributes to it a pathogenic action in the production of funiculitis.

The other observation is from Mr. Semmer of Dorpat. In an animal killed for anatomical purposes, he found purulent collections in the middle of old inflammatory lesions of a testicular cord, of the inguinal glands of the same side, on the surface of the liver, and of the diaphragm, and on various parts of the peritoneum. There were some also in the lungs. The pus of these abscesses contained small brown-yellowish masses, whose microscopic aspect much resembled, according to Semmer, the structure of actinomycosis.

Amongst the cases of Johne, one was entirely conclusive; the parasite resembled exactly that found in the maxillary tumors of the ox. Two others were nearly as positive; the fourth was less so.

According to the author, these are simply a degraded form of actinomycosis bovis, a form which he has often seen in cattle, and especially in a case of a tumor of the reticulum.

In the microscopical point of view, the characters of the alterations of the ventricular cord resemble also those of the actinomycoma of the lower jaw of cattle. Contrary to what exists in ordinary cases of scirrhus cord, in the parasitic form, it is the indurated tissue which predominates; the fistula and the purulent cavities are always in small number, and are often absent.

If a section is made in one of these tumors, its fibrous bottom appears lardaceous, and shows small nodosities, yellow or reddish, isolated or collected together, and varying in size from that of a pea to that of a hazel nut. In these nodules, as in the purulent collections, when they exist, a fine yellowish powder appears, resembling sand or pulverized sulphur. Under the microscope these granulations are seen to be made of tufts of actinomycosis, more or less modified.

It becomes evident from these observations that certain tumors of the cord following castration may be due to pathogenic germs.

According to Johne, these would rise from the bedding of the animals operated upon.—*Annales de Belgique*.

THE MICROBE OF RABIES.

BY M. RIVOLTA.

The method by which the author is said to have demonstrated the constant presence of a spinal micro-organism in rabies, is thus described :

After hardening the spinal marrow, the medulla oblongata and other organs of animals which have died with rabies, in alcohol, he makes fine sections, which he places in chloroform for twenty-four hours, in order to clean them from the fat they may contain. These are again placed in alcohol, and subsequently in a mixture of 10 parts of an aqueous solution of caustic potash (10%), 3 parts of distilled water, and 3 of glycerine, where they are left for a period of five or six hours at most.

The sections are then put into a solution of blue of methylene, where they remain for a few minutes, or until they become colored. They are then washed with distilled water, and spread on a slide and slowly dried in a moderate heat.

This preparation is then sealed with Canada balsam dissolved in chloroform. If the slide is examined at that moment it presents a diffused coloration, but it is easy to bring out the peculiar coloration special only to the bacteria. By carefully exposing the slide to the flames of an alcoholic lamp, until the Canada balsam begins to boil, and then leaving it to become cool, the tissue loses its color, but the bacteria remains intact. By repeating this process two or three times, the bacteria are brought out in a handsome blue color, projected upon a colorless ground.

Thus colored, the bacteria is seen to be formed of several round or oval granulations, united in chains, though at times, in some few cases, they seem uniform and appear to be formed of one single body.

They are found in great numbers in the medulla; they are also numerous in the marrow, but less so in the cerebral hemispheres;

they are also seen in the epithelium of the parotid ; they are also in the spleen and the kidneys, but numerous in the liver, in the vicinity of the hepatic cells.

Professor Rivolta diluted in distilled and sterilized water the bulb of a rabid rabbit, and filtered the produce through a china shifter. With the liquid thus obtained he inoculated three rabbits by trephining; at the same time, and by the same process, he inoculated five other rabbits with the liquid remaining on the shifter. These last two animals died of rabies after eighteen days, while the first three continued free from disease up to four months after the inoculation.

This discovery needs confirmation. It is, however, a very important matter, and may contribute to the illustration of the pathology of this frightful disease.—*Annales de Belgique*.

CASTRATION OF CRYPTORCHID HORSES.

By C. E. MUNN, Veterinary Surgeon, Watertown, Dakota Territory,

I have been much interested at different times in articles published on this subject in various works on the science of veterinary surgery. There have been several methods described and recommended. I have not as yet, however, seen the so-called Farmer Miles' method published; and, as it is most in vogue in this country with those veterinary practitioners who are successful in performing this operation, it must surely claim the attention of all veterinary surgeons who may be called upon to castrate a cryptorchid horse.

It will not be necessary to enter into any of the preliminaries attending the operation, Mr. L. Nielsen, in his excellent article on this subject, in the January and February numbers of the *Veterinary Journal*, having given full particulars as to the proper condition of the animal at the time of the operation, also most desirable age, and so on.

The operator should be very particular in securing the subject to be operated upon. The main points are, to have the animal securely bound, so that there will be as little struggling as possible, the posterior extremities well flexed, the fetlock joints

in close proximity to the stifles. Farmer Miles' method of securing, as shown in Fleming's "Operative Surgery," Vol. I., pages 36-40. is one of the best and safest that I have seen in practice. The subject having been thrown, and properly secured, the operation is performed as follows:—

The parts should be thoroughly cleansed with a warm antiseptic wash, all instruments having been previously disinfected with carbolised oil, or kept within reach of the operator in a basin of carbolised water. The incision should be from 10 to 13 cm. in length, commencing posteriorly, just above the anterior border of the pubis, and a little farther from the median line than is customary in castrating naturally-formed horses. The incision is to be made through the skin only. The fingers of one hand should be inserted beneath the skin, and worked a little to the outside and back, breaking down the subcutaneous tissue until Poupart's ligament is reached. This will be but a short distance. Then the index and median fingers are to be passed over the posterior border of the ligament into the abdominal cavity, care being taken not to injure the ligament or to make the opening into the cavity any larger than necessary. The vicinity of the internal inguinal ring and brim of the pubis can then be explored, and, in most cases, by a careful rotary motion of the fingers, either the gubernaculum testis, the spermatic cord, or the testicle itself can be secured, and the testicle brought to the external opening. If the testicle or either of the guides to it are out of reach of the fingers, the whole hand will have to be inserted. It is very evident, therefore, that the operator with a narrow thin hand has considerable advantage over one whose hand is large and thick. The testicle having been brought to the external opening, I consider that the best method of removing it is by the *écraseur*, but the instrument must be a good one, that will operate without hemorrhage. Such *écraseurs* are not common—at least, such has been my experience.

If the operation is properly performed, and the animal well cared for afterwards, there need be but little fear of any bad results. The animal should be kept in a dry, well-ventilated stall, and given small feeds of easily-digested food, and but a

small amount of water. There is generally more or less fever for four or five days; after that time, if the animal is doing well, he should be given a little exercise daily, but not until the fever has subsided. The average time for recovery is about three weeks.

Carbolised oil is freely used by some operators on their hands, acting as an antiseptic, and also facilitating and rendering less irritating the passage of the hand from the external opening to the posterior border of Poupart's ligament into the abdominal cavity.

Anæsthetics are hardly ever used in this country during the performance of this operation.

This method of castrating cryptorchid horses has proved very successful in this country, when skilfully performed. The few deaths that I have known have occurred from peritonitis, supposed to have been caused through carelessness of the operator in not observing proper antiseptic precautions.

VETERINARY LEGISLATION.

CHARTER.

STATE OF NEW YORK,
CITY AND COUNTY OF NEW YORK. } ss. :

We, SAMUEL MARSH, GEORGE B. SATTERLEE, SAMUEL B. WARD, M. D., WILLIAM H. BARBOUR, F. LEROY SATTERLEE, M. D., THOMAS WINSOR and F. D. WEISSE, M. D., do by these presents, pursuant to, and in conformity with an Act of the Legislature of the State of New York, passed April 12th, 1848, entitled, "An Act for the incorporation of benevolent, charitable, scientific and missionary societies," and the acts of said Legislature amendatory thereof, associate ourselves together and form a body politic and corporate, under the name and style of the "AMERICAN VETERINARY COLLEGE," and have agreed to and have signed our names to these articles of association:

First.—The corporate name of said association is hereby declared to be "AMERICAN VETERINARY COLLEGE."

Second.—The objects for which said corporation is formed are as follows: to establish and carry on a veterinary medical col-

lege and hospital devoted to the education of men in the several departments of the medical sciences necessary to qualify them for the practice of veterinary medicine and surgery, and for the purpose of awarding diplomas and conferring the degree of Doctor of Veterinary Surgery.

Third.—The term of existence of said corporation shall be fifty years.

Fourth.—The business of said corporation shall be conducted by a Board of seven or more parties, and the names of the Trustees of said corporation for the first year are: Samuel Marsh, George B. Satterlee, Samuel B. Ward, M.D., William H. Barbour, F. LeRoy Satterlee, M. D., Thomas Winsor and F. D. Weisse, M. D.

CHAPTER 587.

AN ACT IN REGARD TO THE AMERICAN VETERINARY COLLEGE,
PASSED JUNE 5TH, 1886; THREE-FIFTHS BEING PRESENT.

The people of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. The American Veterinary College, organized under the provisions of chapter three hundred and nineteen of the laws of eighteen hundred and forty-eight, entitled "An Act for the incorporation of benevolent, charitable, scientific and missionary societies," and the acts amendatory thereof, by certificate dated April twenty-seventh, eighteen hundred and seventy-five, and approved by one of the justices of the Supreme Court, and filed in the office of the clerk of the county of New York, the twenty-ninth day of April, eighteen hundred and seventy-five, is hereby declared to be legally incorporated for the purposes of maintaining and conducting a veterinary medical college and a hospital devoted to the education of men in the several departments of the medical sciences necessary to qualify them for the practice of veterinary medicine and surgery, and of conferring the degree of Doctor of Veterinary Surgery.

SEC. 2. All degrees heretofore conferred by said College are declared valid.

SEC. 3. Said College shall be subject to the same duties, obligations and liabilities and to the same control and visitations of the

regents of the university as colleges and universities chartered by said regents.

SEC. 4. This act shall take effect immediately.

STATE OF NEW YORK, }
OFFICE OF THE SECRETARY OF STATE. }

I have compared the preceding with the original law on file in this office, and do hereby certify that the same is a correct transcript therefrom, and of the whole of said original law.

Given under my hand and the seal of office of the Secretary of State, at the city of Albany, this 12th day of June, in the year one thousand eight hundred and eighty-six.

FREDERICK COOK, *Secretary of State.*

Fifth.—The principal place of business of said corporation shall be in the City, County and State of New York.

In witness whereof we have hereunto set our hands and affixed our seals, this 27th day of April, 1875.

SAMUEL MARSH,	GEORGE B. SATTERLEE,
SAMUEL B. WARD, M. D.	W. H. BARBOUR,
F. LEROY SATTERLEE, M. D.	THOMAS WINSOR,
FANEUIL D. WEISSE, M. D.	

STATE OF NEW YORK, }
CITY AND COUNTY OF NEW YORK. } ss.:

On the twenty-fourth, twenty-seventh and twenty-eighth days of April, respectively, before me personally came Samuel Marsh, George B. Satterlee, Samuel B. Ward, M. D., Wm. H. Barbour, F. LeRoy Satterlee, M. D., Faneuil D. Weisse, M. D., and Thos. Winsor, to me known to be the individuals described in and who executed the within instrument, and severally acknowledged that they executed the same.

JEREMIAH LOCLER,
Notary Public for City and County of N. Y.

Approved—GEO. C. BARRETT, *J. S. C., First Judicial District,*
N. Y.

April 28th, 1875.

STATE OF NEW YORK,
CITY AND COUNTY OF NEW YORK. } ss.:

I, WILLIAM WALSH, Clerk of said City and County and Clerk of the Supreme Court of said State for said County, do certify that I have compared the preceding with the original Certificate of Incorporation on file in my office, and that the same is correct transcript therefrom, and of the whole of such original, endorsed filed 29th April, 1875.

In witness whereof, I have hereunto subscribed my name and affixed my official seal, this 29th day of April, 1885.

WM. WALSH, *Clerk.*

REVIEW.

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SENATE CHAMBER, }
ALBANY, May 19, 1886. }

Dr. W. H. Pendry:

DEAR SIR.—Yours of the 17th inst. received. I am pleased to learn that my humble efforts on behalf of the New York State Veterinary Society are appreciated; such expressions are encouraging to every public officer. Hoping the measure, now that it has become a law, will inure to the advantage of the profession. I remain,

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small amount of water. There is generally more or less fever for four or five days; after that time, if the animal is doing well, he should be given a little exercise daily, but not until the fever has subsided. The average time for recovery is about three weeks.

Carbolized oil is freely used by some operators on their hands, acting as an antiseptic, and also facilitating and rendering less irritating the passage of the hand from the external opening to the posterior border of Poupart's ligament into the abdominal cavity.

Anæsthetics are hardly ever used in this country during the performance of this operation.

This method of castrating cryptorchid horses has proved very successful in this country, when skilfully performed. The few deaths that I have known have occurred from peritonitis, supposed to have been caused through carelessness of the operator in not observing proper antiseptic precautions.

VETERINARY LEGISLATION.

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AMERICAN VETERINARY REVIEW.

EDITED AND PUBLISHED BY

Prof. A. LIAUTARD, M.D., V.S.,

*Foreign Corresponding Member of the Central Society of Veterinary Medicine (Paris),
Honorary Fellow of the Royal College of Veterinary Surgeons (England),*

ASSISTED BY

B. MICHENER, D.V.S., New York, DR. N. H. PAAREN, V.S., Chicago,
A. HOLCOMBE, D.V.S., Ft. Leavenworth. DR. J. C. MEYER, JR., D.V.S., Cincinnati,
Prof. R. S. HUIDEKOPER, M.D., V.S., D. J. DIXON, D.V.S., Hoboken,
AND OTHER VETERINARIANS.

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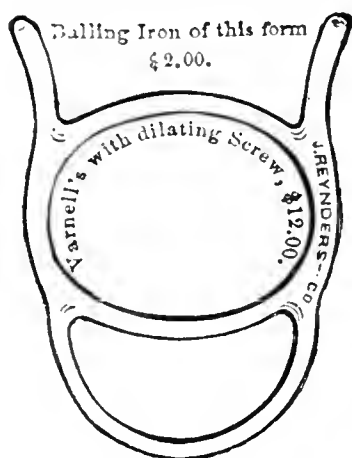
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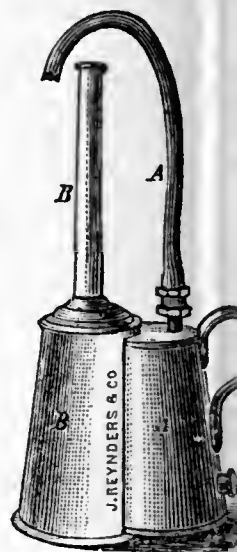
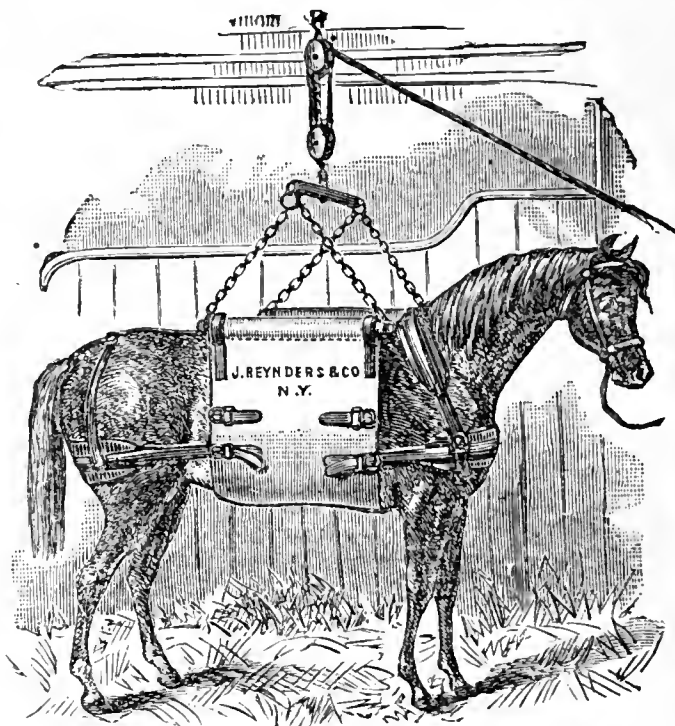
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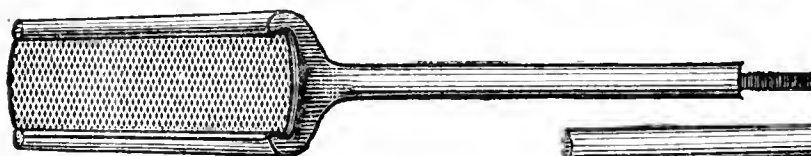
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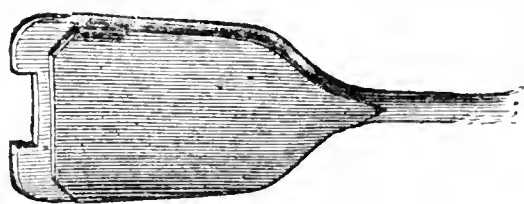
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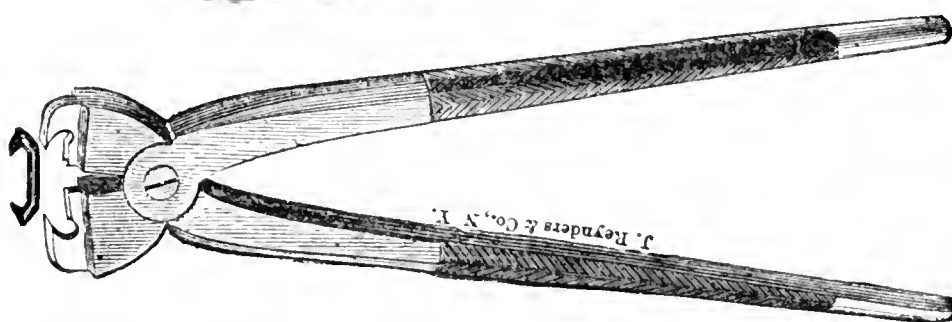
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AMERICAN VETERINARY REVIEW,

AUGUST, 1886.

EDITORIAL.

CEREBRAL INOCULATION IN DOUBTFUL CASES OF RABIES—literature on this disease quite abundant—its symptomatology positive, the post mortem lesions however, in many instances insufficient for a positive diagnosis—importance of some lesions—result of Pasteur's investigation—cerebral inoculation always gives the same result, the same symptoms and the same lesions—death takes place always in almost a specified time—cerebral inoculation of foreign bodies will give rise to meningitis, but that, properly done with rabid nervous substance, will produce rabies with the specific symptoms, duration, and termination and not to the manifestation of rabiform signs. THE DECLARATION IN CASES OF CONTAGIOUS DISEASES—it is the first and probably most important sanitary measure—it is ignored by many and objected to by the majority—laws and regulations make it obligatory—result of its ignorance. TRACHEAL INJECTIONS—results obtained with them by Dr. G. Levi—counter experiments as performed at the Royal Veterinary School of Milan. HEREDITY OF GLANDERS—experiments and conclusions of Messrs. Cadeac and Malet—the mother seldom transmits it, the father never. DISEASES OF THE HEART—conclusion of the excellent translation, by J.S. Meyer, Jr., of the able paper of F. Blazekovic on the subject.

CEREBRAL INOCULATION IN DOUBTFUL CASES OF RABIES.—Notwithstanding all that has been written on the subject of rabies in the dog, it is quite a doubtful question whether our knowledge concerning this frightful disease has yet become complete. The portion of its history with which we are best acquainted is probably its symptomatology, and though it may assume a variety of aspects, there are some of its appearances which will always justify the veterinarian in pronouncing a positive diagnosis upon an inspection of the living patient. And among these there is one so peculiar and so characteristic, that when once cognizant of it he may safely pronounce his condemnation of the animal without even seeing the case. This may be denominated the *vocal test*,

and consists in the change of voice of the diseased animal, which literally condemns himself out of his own mouth. No one who has ever heard the peculiar *rabid bark*, will fail to recognize the sound when again heard. Independently of this, the general sum of the symptoms, the characteristic changes, the progressive paralysis, and the final termination of all in the closing scene within the brief period of from forty-eight hours to four days are too generally comprehended, and have become too familiarly known, as they have been observed and described by Fleming, Youatt, Bouley, Galtier and many others, to have room for the slightest shade of doubt in the mind of a professional man called to pronounce upon a case.

If, however, such is the case in the diagnosis of rabies during life, while the paroxysm, the progress and the mode of death of the patient are *specific* and *characteristic*, the same cannot be affirmed in reference to the cadaver of an animal dead or killed under suspicion of laboring under the disease. The condition of the fauces and of the digestive apparatus, the sometimes absent lesions of the nervous centers, the peculiar aspect of the abdominal organs, the presence of foreign substances in the stomach, and the state of the urinary apparatus, which according to some authorities always presents the special feature of an empty bladder, well retracted into the pelvic cavity—all these lesions have in many instances been the only means of reading a diagnosis, and however carefully the inquiry may have been made, there has been ground for doubt as to the positive nature of the natural or artificial cause of death.

In the year 1881, however, during the investigations conducted by Pasteur in relation to hydrophobia, for the determination of its nature, character, method and history, that learned chemist was brought to the conclusion that not only the virulent element of rabies existed in the nervous system, in the brain and in the medulla, but that by the operation of cerebral inoculation of this infected nervous matter, he would in a short time develop rabies under various forms. His communication was important to all who looked at this result, but to the veterinarian, from any point of view, upon whom the decision of the question arising in the

of the dead animals must often devolve, it was a most valuable assistance, by enabling him to dispense with the long and tedious and not always successful process of ordinary inoculation, and replacing it by one of short duration, and which was *always positive*, not negative, *in its results*. The experiments had been made time and time again. Hundreds, and indeed, thousands of these tests have been made, and the operation is so simple that failure, even through imperfect manipulation, has been followed by death in only an infinitesimal proportion, and to-day the whole world is practicing cerebral inoculation for the development of rabies, either for information, experimentation or inoculation. To say, then, that "the method of demonstrating rabies by direct inoculation of the brain is fallacious," is an assertion that all intelligent and unprejudiced scientists will pronounce erroneous.

This assertion, made before a scientific body of this city, was supposed to be supported and confirmed by the report of a few experiments in which cerebral inoculation of foreign substances gave rise to meningeal disturbances, and to symptoms which *were* *imimed* to be of a rabid character. Of course it will not be denied that meningitis may sometimes result from cerebral trephining, from improper manipulation and from the introduction and presence in the brain of foreign substances, as exemplified and reported in the July number of the *Journal of Comparative Medicine*, and a careful reading of these reports evidently shows that no other result could have been looked for. But to affirm the fallacy of cerebral inoculation from these premises is to take great liberty with the facts and the logic of the case, and is making quite too wide a stride in reach of a conclusion.

Let the experimentators who have come to this rather hasty conclusion repeat their experiments a sufficient number of times, no longer with foreign substance, but with *fresh material* obtained from a rabid or suspected rabid animal; let them closely watch their patients, and look for the *well confirmed symptoms* of the disease; let them *carefully* note the regular method in which the mortality will take place, after an almost positive length of time, *always the same* for those in which the rabid brain has been used; let them observe the animals that may die from meningitis, care-

fully noticing the symptoms, the *duration of the disease*, etc., and if they will conscientiously lay aside their fancy for any *bogus* hydrophobic symptoms which may make their appearance, they will certainly abandon the mistaken conclusions, which, were they to become established and accepted, would deprive investigators in this field of one of the best means of recognizing rabies in the cadaver.

THE DECLARATION IN CASES OF CONTAGIOUS DISEASES.—In a practical, sanitarian point of view, the first and one of the most essential measures touching the prophylaxy of contagious diseases is the declaration of the existence of the obnoxious affections. Such a declaration, in a report to the proper authorities of the presence of the designated disease, recognized and pronounced as contagious either to man or to animals, or to both, and by which the condition of the disease is authentically established, having been obtained as a basis for effective future proceedings, it will be a comparatively easy task to determine the steps to be subsequently taken to insure the result desired, of effectually checking the spread of the obnoxious malady, the only method of effecting which and of saving the bulk of our domestic animals is the prompt destruction of the diseased individuals. As important and necessary as this measure is in its results, it is naturally and inevitably, of all sanitary regulations, probably the one which is the most difficult to carry into effect. It is opposed and evaded by the owners of the diseased animals, and it is offensive to the sympathies of interested neighbors, fearfully apprehensive, perhaps, of the time when their turn may come to encounter the evil; and moreover, it must be admitted that it is distasteful to even the veterinarian himself, who feels his professional conviction of the right and necessity of the heroic treatment, and his interest as a practitioner drawing in contrary directions—for the practitioner who gives a hopeless diagnosis and a prognosis which is a death sentence, will find it hard work to maintain a pre-eminent popularity, or to avoid giving offence at times to inconsiderate people.

The delicacy and embarrassment unavoidably involved in the issue of the condemnatory declaration seem to have been appre-

ated and considered by legislators in their action upon the measures involving the discussion of sanitary matters, and as a means of relieving the official executants of the law from the unjust odium which is sure to be incurred by every man who faithfully performs the unpleasant duty committed to him, by making its execution imperative and obligatory by law. For example, on the 11th of September, 1884, a section of the Sanitary Code of the Health Department of the City of New York was passed which read as follows:

“SECTION 185. Every veterinary surgeon who is called to examine or professionally attend any animal within the city of New York having the glanders or farcy, or any contagious disease, shall within twenty-four hours thereafter report in writing to the Board of Health of such city the following facts, viz.: 1st, statement of the location of such diseased animal; 2d, the name and address of the owner thereof; 3d, the type and character of the disease; and to request compliance with the same.”

Similar regulations may doubtless be found in other orders, to which, it is feared, ignored or violated, with whatever results may be expected from ignorance or violation of the law.

A case of quite recent occurrence may be cited, which is fairly illustrative of the matter under discussion.

A veterinarian was called to examine an animal, in which he thought he recognized glanders, but, dissatisfied with his diagnosis, the owner called in two other veterinary surgeons, who derided and denied the first diagnosis, and treated the animal until he died, after a few days illness. The result was an uncertainty as to the diagnosis, placing the first practitioner in a decidedly unpleasant position, and a failure and error as far as sanitary medicine is concerned. All this might have been avoided had the declaration been made to the proper authority, who would have, *officially*, either confirmed or overthrown the diagnosis. The veterinarian who neglects to obey a sanitary order, such as the required declaration, does injustice to his employer, to himself, to his profession and to the community.

TRACHEAL INJECTIONS.—In 1883, Dr. G. Levi, of the University of Pisa, published a little work on the therapeutic advantages to

be obtained by tracheal injection in the treatment of all diseases, and gives several reported cases of recovery from glanders and farcy.

At that time the new mode of administering medicines created some interest in the profession, and carefully written notices and reviews of the book from time to time appeared in veterinary journals. The veterinary periodicals of Italy have since then published a variety of articles on the subject, relating principally to the two diseases mentioned, and the learned director of the veterinary school of Milan, Dr. Lanzillozzi Buonsanti, has, in several numbers of the *Clinica Veterinaria*, published numerous communications upon the curability of glanders by tracheal iodurated injections.

The importance of the subject has naturally excited an interest amongst veterinarians, and many experiments have been reported, the majority of them having proved unsuccessful. In fact, if there have been recoveries, they seem to have been obtained exclusively by Dr. Levi, whose principal claim is that the disease is always curable in its first stage, or at a time when the lesions are recent, etc. Dr. Levi also claims in its favor that the new treatment is perfectly innocuous and harmless in its influence.

In the excellent annual report of the Royal Superior School of Veterinary Medicine of Milan, the worthy director, Dr. Lanzillozzi Buonsanti, gives an account of a number of experiments conducted in the Milan School, referring to the various points claimed by Dr. Levi, and his conclusions are that: 1st, the condition and serious character of glanders are not in proportion to the clinical symptoms, and that a favorable prognosis of recovery cannot be given from them alone; 2d, that the method of tracheal injections not only does not cure glanders, but that they accelerate the evolution of the symptoms; 3d, that irritating tracheal injections cannot be continued for a length of time without giving rise to a severe traceho-bronchitis and peritracheitis of a serious nature. The reports terminate in saying that it is most probable that all the cases of so-called recovery which had been reported were but those of temporary improvements—"white-washed" cases, so-called—in which a new development of the disease would

take place as soon as good hygienic and therapeutic effects, to which the patients were submitted, would have ceased.

HEREDITY OF GLANDERS.—The participation of the offspring in the diseases of their parents, and the development in the former of the germs existing in the constitution of the progenitor, are facts which cannot be ignored. But just to what extent and just in what proportion the idiosyncracies of the parents contribute, by transmission of germs or otherwise, to influence or originate the characteristics of the mutual product, remain, with kindred questions, yet to be explored. Contagious diseases are transmissible from the mother to the foetus by the placenta, in many affections, and there can be no doubt that microbes carried by the blood have more chances to contaminate a foetus than those which are enclosed in an organ in which they must meet many obstacles to their dispersion through the economy, by the character of the changes to which they give rise.

Amongst the diseases whose maternal heredity is well known, both in man and animals, are small-pox, measles, scarlet fever, syphilis, chicken cholera, symptomatic anthrax, anthrax fever, pleuro-pneumonia, small-pox in sheep, and tuberculosis.

The influence contributed by the male parent in the transmission of contagious diseases is, however, more limited than that of the mother, although syphilis in man and tuberculosis in animals are well known to be inherited by the offspring of parents affected with those diseases. The extent to which these conditions influence the product of glanderous parents is a question of great interest, and which Messrs. Cadeac and Malet, of the Toulouse veterinary schools, have endeavored to solve. By a number of clinical observations, and a number of experiments, they have obtained the following facts :

1st. Out of twenty-nine clinical observations, there is not one which conclusively proves the transmission of glanders from the mother to the foetus.

2d. Out of twenty-one experiments, this transmission has been proved only four times.

3d. Out of fifteen animals born of healthy mares and glan-

derous stallions, two only have presented doubtful symptoms, and insufficient to positively prove that glanders is transmissible by the genital apparatus of the male.

4th.—Seven experiments made to elucidate this special point have always given negative results, even in cases where both parents were diseased.

5th. The product of glanderous parents, watched during six months, have never presented symptoms or lesions, and the test of inoculation has always been followed by negative results.

6th. The inoculation of virulent liquids is equally as efficacious upon the products of glanderous parents as it is upon subjects of pure origin; consequently they did not have glanders in nature, nor in germ, nor did they enjoy immunity from it.

The conclusion of the interesting and able investigation made by the Toulouse professors, is that glanders is seldom transmitted from the mother to the foetus, and never by the father.

DISEASES OF THE HEART.—In our present issue we conclude the series of papers communicated by our associate editor, Dr. J. Myers, Sr., on the Diseases of the Heart of Domestic Animals, by the publication of the portion relating to treatment indicated. Of all the communications we have offered to our readers on this side of the Atlantic, probably there has never been one possessing such an amount of interest and value as this translation from F. Blazekovic. The literature on this subject is so deficient, that to have made a good German version, accessible to all English reading people, is on the part of Dr. Myers a most meritorious task, by which we hope American veterinarians will largely profit. We regret, however, that the articles in question were not prepared for the columns of the REVIEW under an arrangement which would have made feasible their publication in a single volume.

THE PASTEUR INOCULATION IN RUSSIA.—The Odessa correspondent of the *Daily News* telegraphs: "From the 24th inst., all persons in Russia bitten by rabid dogs and wolves will be treated in this city by Dr. Gamelei, for whose initiatory operations lymph has been supplied from M. Pasteur's laboratory."

ORIGINAL ARTICLES.

DISEASES OF THE HEART IN DOMESTIC ANIMALS,
ESPECIALLY THE HORSE.

BY FR. BLAZEKOVIC.

*(Translated by J. C. Meyer, Sr., V.S.)**Continued from page 105.*

THERAPEUTICS OF THE DISEASES OF THE HEART.

The therapie of diseases of the heart, if founded upon scientific principles, is of importance, provided it is stripped of empirism. For, by therapeutics it is not meant to interfere nolens lens, or to leave the disease to chance, the healing power of nature, but rather it is absolutely necessary as surgeons, to convince ourselves whether we have discerned the extent of cure, mere improvement, alleviation or total incurability. After careful examination it soon becomes obvious whether we have to do with primary, acute, inflammatory, or with secondary, chronic, organic defects of the heart and their sequelæ.

If the examination establishes acute inflammatory diseases of the heart, then hope of recovery should never be abandoned; but on the other hand we must not take the matter too optimistically, especially in the presence of the owner. But we may be satisfied that science of to-day does not possess a *modus operandi* by which most organic derangements of the heart might be regulated, still being confined to a palliative and symptomatic healing process, but we can give relief to many an animal and render him serviceable for light farm work.

In the first place, a correct diagnosis of the affection of the heart is the main object, then in relation to consecutive and concomitant ailments it is also of eminent practical value, since the possibility of a cure, the course of the therapeutics, particularly in consecutive diseases, enables us to readily discern the heart affection. A correct dietetic procedure is exceedingly important. Comparisons between animals which have been treated in a dietetic manner, and others which have suffered neglect, or labored under other unfavorable circumstances, impress upon us the great

value of the proper treatment, nursing and attendance of animal suffering with heart disease. Diet is at the head. Many a noble race horse has fallen victim to injudicious feeding; my experience in this direction has been particularly extensive. With moderate, not too proteinaceous food, more hay than oats, turnips, cut straw, etc., and light work, such animals will prove serviceable for a long time; but herbage and pasturage are specially recommended for such patients. Whenever possible it is always advisable to put a horse afflicted with heart disease to a stud or pasture.

I have had mares in the stud for years which were emphatically matous to a high degree, with considerable organic defects of the heart which, notwithstanding these great defects, could accomplish parturition without any disadvantage. Nothing acts so beneficially upon chronic affections of the heart as the agreeable breeding life.

Proceeding with the direct therapeutic treatment, we will first of all consider the acute inflammatory diseases of the heart which by timely interposition warrant the most hope of recovery.

In all inflammatory diseases of the heart a thorough antiphlogistic treatment is in order. The successful remedies in the whole antiphlogistic procedure are, above all, venesection at the proper time and cooling agents. The beneficial effect of venesection at the outset of the inflammatory hyperamie, when the impulse of the heart becomes manifest, and the murmur rattling is not to be doubted. Indeed it sometimes happens that after a few hours, hyperamie in the cavity of the heart and myocardium disappears. Next are the local cold applications. A bag containing cracked ice applied to the region of the heart and thorax, producing a continual trickling of fresh cold water, in this kind of heart disease has an exceedingly good effect. Especially does the cold act in a regulating manner upon the violent action of the heart, and upon the lowering of the temperature of the body. Also in all chronic defects of the heart where a violent alteration of the heart is called forth by an attack, the application of local cold will always compensate the physician and remove such violent intervals. The applications must be made on such parts

only, where chilling need not be feared. A light purgative (salts is preferable) will aid the treatment. Drastic cathartics are to be avoided under all circumstances. Epsom salts, natrium and cream of tartar given in frequent doses are sufficient, and have been proved.

The regulation of the heart's action is highly important. Indeed it is one of the chief conditions for a successful cure. To this end digitalis and natron salycil. are at our command. I cannot recommend natron salycil. too highly, for when digitalin fails, it may still be relied upon. Large doses of 30.00 grains, two to three times daily, with two to three grains quinia, has always produced excellent results, especially in such cases where typhus, anthrax, influenza, pericarditis and myocarditis accompanies constitutional diseases, which very often occur.

The antiseptic and temperature-lowering effect of the salycilic acid as regulator of the heart's action is most effective in the form of natron salycilic. Digitalin needs no commendation.

The proper use of aconite, also opium in excessive frequency of the pulse, and the latter in too violent alteration of the heart, will be indicated in those cases where a discontinuance of digitalis is signified. After administering digitalis for two or three days without success, we may sometimes have the desired result with the above mentioned narcotics.

As soon as the exudative stadium is established, be the exudation of a fibrinous, plastic or serous character, we must in the first place endeavor to check it, then remove it. This is often a difficult task, nevertheless it can be accomplished. Already at the beginning of the disease, the suppression of the exudation must be acted upon, and to this end the already mentioned antiphlogistic treatment is well adapted. Besides these, quinine in all its compounds is to be recommended. It is to be given two or three times per day, in one, two or three grain doses in combination with natr. salycil., digitalis, aconite, opium, just as the condition of the patient demands, and later on with an addition of kali-jodat. The result is often surprising. Kali-jodat. 3.00 in four litres of well water is the best form of medication.

I here acknowledge being a heretic to some degree, in apply-

ing costly medicaments in the veterinary practice, but I proceed from this point of view, not to give that which is cheapest, but that which is most appropriate. Of course I would not order twenty dollars worth of medicine for a horse which is not worth fifteen dollars. But in cases of valuable race horses, which predominate in my practice, I cannot ask whether the medicine is cheap, but whether it answers the purpose. The owner of such a horse does not inquire as to the cost of the treatment, but if ever possible he wants to save his valuable animal, sometimes worth thousands, even if it be only for breeding purposes. Where circumstances will not admit of giving quinine, a diuretic or purgative may be given a trial, such as cream of tartar, tartar emetic, turpentine, *baccæ juniperi*, *ononis*, *petrosilei*, *cantharid.*, etc. in short, the expedients of the old school. If relapses occur, the antiphlogistic treatment must be repeated. If the diseases of the heart during their course assume a chronic character, appearances of anæmic become manifest quite often, which require the employment of iron preparations, I can especially recommend *ferrum lacticum* as the most soluble of all iron preparations; *ferri. sulph.* will also answer the purpose.

Herewith the therapeutical treatment of the inflammatory diseases of the heart are given. These are not recipes and formulas, but the intelligent practitioner will easily understand without further specifications.

The treatment of nervous affections, as palpitation of the heart, neuralgia, cramp, etc., is much more successful. The application of *aqua. laurocerasi*, twenty per dose, mixed with opium or aconite, in palpitation is generally crowned with success. In nervous palpitations we will find that *digitalis* is indispensable; still, should it fail, narcotics would be in place. After quieting the nervous alteration it is well to give one or two doses of cream of tartar with *natr. nitric.*; the disturbances of the circulation which might possibly follow would thereby be paralyzed. Intense nervous alteration, in which dyspnœa is often present, requires the use of *natron salycil.*, venesection and antiphlogistic remedies. A nervous alteration is nearly always present in laminitis in horses, and rheumatism of the joints, against which

atron salycil. is a specific. In most cases it will remove the threatening symptoms of the heart.

The therapie of organic defects of the heart is much more hopeless. As already mentioned, we cannot hope for a total cure, but must restrict ourselves to a palliative and symptomatic interference. In the *Annales de Médecine Vétérinaire*, 1881, No. 9, Prof. Degive gives an account of symptomatic treatment of two cases of defects of the heart with momentary violent action. But only such momentarily-appearing violent action of the heart are brought for treatment which present themselves with or without secondary appearances, as hemorrhage, difficult respiration, etc. According to the degree of alteration we must interfere with strong or weak remedies. In some cases a dose of atron salycil. and digitalis is sufficient; in others bleeding and cooling agents are indicated; especially then, when danger of suffocation, severe emphysema, or even œdema threatens the life of the animal.

Such momentary alterations occur in nearly all kinds of defects of the valves, hypertrophy of the heart, aneurism, expansion, etc., and are the result of improper usage or diet; still they often set in without any traceable cause.

As soon as the violent symptoms are allayed, natron salycil. and digitalis are to be discontinued, otherwise paralysis of the heart is likely to occur. At all events both remedies must be used cautiously in all such chronic heart diseases where a pronounced weakness of the heart and diminished impulse are present, as their action upon the inhibitory nerves of the heart can cause unfavorable results. In such cases we might try bromide of potassa, clysters of chloral and morphia injections; for if paralysis of the heart does not actually set in, still a dangerous weakness of the heart will undoubtedly remain.

If chronic roughness, insufficiencies, including proven or suspected malformations, are to be alleviated or brought to a standstill, a persistent use of absorbing and soluble medicaments in small doses are indicated. In violent impulse of the heart, tartaric acid in small doses is to be recommended, but it must be kept up for some time. Its effect upon the inhibitory nerves of the

heart by means of the sympathetic nerve is, besides its absorbing qualities, quite effective. The continued use of cream of tartar, then of calomel, might also call forth some improvement. For emphysema (in consequence of defects of the heart) horse dealers will administer purgatives, and thereby bring on momentary improvement. Of course they do not know how the result was attained.

It is an established fact that effective purgatives will afford relief in chronic affections of the heart. The occasional administering of the same would be quite rational, but it must not be carried too far, and debilitate the animal too much.

The treatment of the consecutive diseases, together with the defects of the heart, must correspond to the nature of the existing consecutive.

THE ÆTIOLOGY OF RABIES

AND THE METHOD OF M. PASTEUR FOR ITS PREVENTION.

BY HERMANN M. BIGGS, M. D.,
Instructor in the Carnegie Laboratory.

Continued from page 162.

In the introduction to his last communication upon rabies, referring to this former method, he says: "The prevention of rabies, as I have described it in previous notes in my own name and the names of my collaborators, certainly constitutes a real advance in the study of this malady—an advance, however, which is more scientific than practical. Its application was dangerous. Among twenty dogs that had been thus treated, I could not affirm that more than fifteen or sixteen had been rendered refractory to rabies. It was expedient also to complete the treatment by the inoculation with an exceedingly virulent virus for control, in order to confirm and strengthen the refractory condition. Finally, prudence dictates that the dogs should be kept under observation for a longer time than the period of incubation of the disease produced by the direct inoculation with the last virus, and thus an interval of not less than three or four months was required to afford perfect assurance of a fully refractory condition. It was therefore neces-

ary to obtain, if possible, a more rapid method, and one giving absolute security to dogs. After almost innumerable experiments, I obtained a preventive method, practical and prompt, with which sufficiently numerous and assured successes have already been obtained upon dogs to give me confidence in its general applicability to all animals and to man himself."

This method, as gathered from Pasteur's communication and from his assistants while in the laboratory, rests especially upon the following observations :

In the human being or in animals dead of rabies, the rabic virus is present in great abundance and in a pure form in the central nervous system, and especially in the medulla oblongata and the spinal cord. This observation is not wholly original, but in confirmation of the experiments made by Rossi and Hertwig, who succeeded in producing rabies in healthy dogs by inoculations with portions of nerves obtained from animals dead of rabies. Pasteur found that animals inoculated with portions of the medulla spinal cord, and then brought into suspension in a sterilized quill, developed the disease with greater certainty than when inoculated with the saliva of rabid dogs. This is especially true when the inoculations are made upon the surface of the brain underneath the dura mater. Nearly all species of animals are susceptible of the disease ; but the virus undergoes certain modifications as regards its virulence and its period of incubation after passage through different species. In the transmission of the virus through a series of monkeys, the virulence gradually becomes diminished and the period of incubation longer. If, on the other hand, the virus is passed through a series of rabbits, the virulence is gradually increased and the period of incubation becomes shorter. The average period of incubation of rabies in rabbits which have been inoculated under the dura mater, after trephining with the spinal cord of a dog just dead of the disease, is fifteen days. However, when the virus is passed successively through a series of rabbits from the first to the second, from the second to the third, and so on, it always using for the inoculation of the following animal the spinal cord of the one just dead of the disease, and in each case making the inoculations underneath the dura mater in the same manner

as in the first instance, the period of incubation becomes gradually shorter, and, after the passage through a series of twenty-five rabbits, the time is finally reduced to eight days. In the transmission of this virus through a second series of twenty-five rabbits, the period of incubation is further reduced to seven days, but at this point apparently becomes stationary, as this time is not materially diminished in the passage through a third series of forty animals. Commencing these experiments in November, 1882, at the end of three years Pasteur had inoculated in this manner successfully a series of more than ninety rabbits, without having had this series once interrupted or broken. He says of this: "Nothing is easier, therefore, than to have at one's disposal, after considerable intervals of time, a virus of perfect purity always identical, or nearly so. This constitutes the practical point of the method."

If, now, the cord is removed (with all possible care to prevent contamination with foreign matters) from a rabbit just dead from rabies, and is suspended in a jar the air of which is artificially dried and kept at a constant temperature of 20°C ., it gradually loses its virulence until, at the end of about fifteen days, this has become quite extinct. The time required for the extinction of the virulence is somewhat dependent upon the thickness of the spinal marrow and upon the external temperature. The spinal cords which have been subjected to this process of desiccation for a shorter period than fifteen days possess a gradually increasing virulence inversely proportionate to this time. The conditions remaining the same under which the cords have been preserved, the degree of virulence is always constant, or nearly so. If the infectious cords, while in a moist condition, are protected from the atmospheric air and submerged in carbonic-acid gas, the virulence may be preserved unaltered for several months, providing only that no foreign micro-organisms gain access to them. According to Pasteur, "these observations constitute the scientific points of the method."

To render a dog refractory to rabies the following method is pursued:

On the first day the animal is inoculated with a portion of the cord (removed from a rabbit dead of rabies appearing after

incubation period of seven days) which has been preserved in dry air for about fourteen or fifteen days, and has thus been deprived of all its virulence. On the following day a cord twelve or thirteen days old is used, and on the succeeding days the inoculations resolve themselves into about the following order:

3d day, spinal cord 11 days old.					
4th	"	"	"	9	"
5th	"	"	"	7	"
6th	"	"	"	6	"
7th	"	"	"	5	"
8th	"	"	"	4	"
9th	"	"	"	3	"
10th	"	"	"	2	"
11th	"	"	"	1 day	"

This is about the order followed, more inoculations being here described than are perhaps essential or usually employed in practice. The inoculations with the cords which have lost their virulence through the process of desiccation gradually render the animal insusceptible to the most virulent forms of the virus, so that, finally, no symptoms follow inoculations with virus which produce rabies in dogs with great certainty in from eight to ten days, when the animals have not been previously protected by inoculation with the less virulent cords. In this manner dogs may be rendered refractory to rabies, even when they are subsequently inoculated, underneath the dura mater after trephining, with the most virulent virus.

The efficacy of this method was proved by subjecting fifty dogs to these inoculations, with success in every case in rendering the animals refractory to rabies. After having arrived at these results, Pasteur felt justified, after consultation with Dr. Vulpian and Dr. Grancher, in subjecting to the treatment a boy, Joseph Meister by name, who had been bitten by a rabid dog and who was expectedly presented himself at the laboratory for treatment on July 6th.

This boy had been bitten on July 4th in fourteen places by a dog which was supposed to be undoubtedly rabid. Many of the wounds were very deep, and a portion of them only had been

cauterized twelve hours after the accident, so that, in the opinion of Dr. Vulpian and Dr. Grancher, the boy seemed certainly destined to develop hydrophobia. He was accordingly subjected to the following inoculations:

July 6th,	8 P.M.,	spinal marrow of June 21st,	15 days old.
" 7th,	9 A.M.,	" " "	23d, 14 " "
" 7th,	6 P.M.,	" " "	25th, 12 " "
" 8th,	9 A.M.,	" " "	27th, 11 " "
" 8th,	6 P.M.,	" " "	29th, 9 " "
" 9th,	11 A.M.,	" " "	July 1st, 8 " "
" 10th,	11 A.M.,	" " "	" 3d, 7 " "
" 11th,	11 A.M.,	" " "	" 5th, 6 " "
" 12th,	1 P.M.,	" " "	" 7th, 5 " "
" 13th,	11 A.M.,	" " "	" 9th, 4 " "
" 14th,	11 A.M.,	" " "	" 11th, 3 " "
" 15th,	11 A.M.,	" " "	" 13th, 2 " "
" 16th,	11 A.M.,	" " "	" 15th, 1 day "

Pasteur says of this case: "I dare say that a smaller number of inoculations would have been sufficient, but it is easy to understand that the first trial was made with the observation of every possible precaution."

In order to determine the virulence of the virus used, two rabbits were inoculated each day in the usual manner with the same virus as that used for the boy. These inoculations showed that the cords used on the 6th, 7th, 8th, 9th and 10th of July were not virulent, since they did not produce rabies in the rabbits inoculated on these days. The cords used on July 11th, 12th, 14th, 15th and 16th were all virulent, and were of a constantly increasing virulence. Rabies appeared after seven days of incubation in the rabbits inoculated with the cords of July 15th and 16th, after eight days in those of the 12th and 14th, and after fifteen days in those of July 11th. Notwithstanding the fact that in the last inoculations, virus was used which was far more virulent than that of rabid dogs, still these inoculations were followed by no symptoms, and now that more than six months have elapsed since this boy was bitten, he yet remains perfectly well.

The methods used for the preservation of the spinal cords and

the preparation of the virus for the inoculations are exceedingly simple. After the death of an animal from rabies, the spinal cord is removed with the greatest care and suspended in a flask about half a metre high. These flasks have rather large mouths, which are tightly plugged with sterilized cotton and the bottoms are covered about one inch deep with caustic potash to absorb all moisture from the air. The room in which the flasks are placed and in which the virus is prepared for the inoculations is kept constantly at a temperature of 20°C . The lower the temperature, the longer the virulence of the cords may be preserved. The virus used for the inoculations is always prepared fresh, and for doing this a piece, a few millimetres in length, is first snipped from a cord that has the desired degree of virulence, as determined by the length of time that it has been suspended in the flasks. This piece is then rubbed up with a small quantity of sterilized chicken bouillon in a small conical glass. *There is no exact proportion between the amounts of spinal marrow and bouillon used in preparation of the virus.* The spinal marrow, after being in this manner brought partially into suspension in the bouillon, soon settles to the bottom of the glass, and the comparatively clear fluid above is used for the inoculations. These are made in the case of the human being by hypodermic injections into the cellular tissue of the anterior abdominal wall. An ordinary Pravaz syringe is used for this purpose, and from half a syringe to a syringe of the bouillon is injected, in each case depending upon the age of the person under treatment. The spinal marrows that are used in these inoculations are always those obtained from rabbits which have died from rabies after a period of incubation of seven days.

These inoculations are not followed, either immediately or remotely, by any constitutional disturbance, so far as I was able to determine, and they produce only a slight local tenderness—scarcely more than that caused by a hypodermic injection of morphia.

The order of the inoculation, as followed now in the treatment of the human subject, is practically the same as that described above for rendering dogs refractory to the disease.

Since Pasteur's communication to the French Academy, on October 26, 1885, his laboratory has been besieged by many persons from all countries who had been bitten by rabid dogs, and after the lapse of only a little more than two months, up to January 1, 1886, nearly one hundred and forty persons of all ages and nationalities had been subjected to these inoculations. The period that had elapsed after the accident, before the treatment was commenced, varied in different cases from a few hours to thirty-six days. In these one hundred and forty cases, up to the time of my visit to Paris, only one death had occurred, and in this case the child was not inoculated for the first time until thirty-six days after she had been bitten. Shortly after the inoculations were completed this patient died with clearly defined symptoms of hydrophobia. In explanation of the failure to prevent the appearance of the disease in this instance, Pasteur asserted that the period of incubation of the disease as transmitted from the rabid dog had elapsed before immunity had been conferred by the inoculations. This explanation certainly seems to be reasonable when we remember that the period of incubation of rabies in the human being, although usually more than thirty-six days, still not infrequently is less than this time. An interesting and serious question came up in connection with this death. It was, of course, possible that the disease might have been the result of the bite of the rabid dog, or might have been caused by the far more virulent virus used in the inoculations. A solution of this question was obtained in the following manner: The virus of a rabid dog, when transferred to a rabbit by inoculation underneath the dura mater after trephining, produces rabies on an average in fifteen days, while the most virulent cords used in the inoculation produced rabies in rabbits with the greatest uniformity in seven days, and in dogs in from eight to ten days. Pasteur then asserted that if rabbits were inoculated in the usual manner with material from the brain or spinal cord of this child, that if the disease of the child was produced by the inoculation, the rabbits would die of rabies which declared itself after a period of incubation of seven days; but if the disease in the child was due to the inoculation made by the bite of the rabid dog, then disease

in the animals would not make its appearance until about the fourteenth or fifteenth day. Accordingly, rabbits were inoculated from the child's brain removed at the autopsy, and they died with the usual symptoms of rabies, which appeared on about the fifteenth day. The result of this experiment seems very satisfactory, but there is apparently a source of error in the possibility of the periods of incubation of the respective viruses being altered by their passage through the human being.

An important question immediately arises in connection with the conclusions to be drawn from the inoculation of these different persons, and that is in respect to the existence of genuine rabies in the many dogs by which they were bitten. As much as possible is taken to ascertain this fact, but, of course, in some individual cases it cannot be satisfactorily determined, inasmuch as the dogs are so often killed before the presence of rabies has been absolutely shown or before the animals have been examined by competent veterinarians. In many of the cases there can be no question as to the genuine nature of the malady with which the dogs were affected, and, as the number of persons already inoculated is very large and is being constantly augmented, the importance to be attached to the doubtful cases is proportionately diminished. The conditions obtaining in the cases of the first Americans—four in number, who were sent to Paris for treatment in the care of Dr. F. S. Billings—as regards this point would have been exceptionally satisfactory providing only the dog by which these children were bitten was shown to be rabid. This, apparently, was not the case. Six children and a number of dogs were bitten by the same dog, supposed to be rabid. The animal was immediately killed, but a number of the dogs bitten were placed under confinement. The wounds of all the children were cauterized after the lapse of a few hours. Four of the children were sent to Paris and were treated by M. Pasteur; the two others remained at home.

In this case the dogs which were bitten and placed under confinement, and the two children which remained at home, served as a control on those inoculated, but, inasmuch as more than ninety days have elapsed since the accident and neither the unin-

oculated children nor the dogs bitten have developed any symptoms of rabies, the probable result is evident.

At the time of the writer's visit to Paris there were from twenty to twenty-five persons being inoculated daily, and scarcely a day passed that some new patients did not present themselves for treatment.

The principles underlying Pasteur's method for the preventive treatment for hydrophobia may be stated in a few words as follows: The period of incubation of rabies as transmitted from the dog to other animals and man is very variable, but in man as a rule, is exceedingly long, being rarely less than thirty days. By the passage of rabies from dogs through a series of rabbits the period of incubation of the disease may be finally reduced to about seven days, as it occurs in these animals. The virulence of the spinal cords from rabbits dead of a seven-day rabies may be diminished in a constant degree by suspension in an absolutely dry air at a given temperature. Man or animals that have been subjected to a series of inoculations with these cords of diminished virulence, beginning with a very weak virus and gradually going on to a stronger and finally to the most virulent form, gradually become insusceptible to the most virulent virus. The period of incubation of this virus is very short, and the time required to confer insusceptibility to the disease is much less than the ordinary period of incubation of hydrophobia as produced in man by the bite of a rabid animal; consequently, if too long a time has not elapsed after the bite of a rabid dog before treatment is commenced, the person or animal may be rendered insusceptible to the disease before this period of incubation has elapsed. The time that may elapse in the case of the human being bitten by a rabid animal before successful treatment may be commenced is probably, as a rule, not less than twenty days, and in some cases may be considerably more than this, but is perhaps as variable as the period of incubation of the disease in different cases in the human subject resulting from the bites of rabid dogs, and is dependent upon the same idiosyncrasies of the individuals.

As to the interpretation of the prophylaxis against rabies, Pasteur says that the attenuation in the virulence of the rabic

ords by the process of desiccation is explained on the supposition that the continuous contact of the dry air produces a gradual diminution in the intensity of the virulence of the cords until it finally becomes extinct; that the prophylactic method in its application depends for its efficacy upon the employment at first of virus without appreciable activity, followed by a weak virus, and then by a more and more virulent form; that the diminution of the virulence of the cords is due to an impoverishment in quantity of the virus contained in them, and not to an impoverishment in virulence; consequently in the inoculations the virus used is always identical as regards its virulence, and is variable only in respect to the quantity employed, so that the refractory condition to rabies follows from the employment of very small but constantly increasing quantities of a virus possessing always the same degree of virulence. This interpretation of the method of action of the virus is the more interesting as a new and quite different principle is involved from that obtaining in the vaccine for small-pox or the vaccines devised by Pasteur for the prevention of anthrax, chicken-cholera, and typhus in pigs. In small-pox we have a virus modified in character and virulence by its passage through another species of animal; in anthrax, chicken-cholera, and typhus in pigs, we have a virus modified in respect to its virulence by the conditions of temperature to which it has been subjected during its growth; and, finally, in rabies we have a prophylactic method dependent upon the employment of a virus always constant as regards its virulence, but used in very small and constantly increasing quantities. Apparently, then, already there have been three methods discovered for the preparation of preventive vaccines for different forms of the contagious diseases. The theoretical principle has been also established by the searches of Pasteur, and more recently by Burdon Sanderson, the report of whose investigations has not yet been published, of the possibility of depriving cultivations of pathogenic microorganisms of their virulence in a constant and persistent degree without in any other respect affecting their morphological or biological characteristics. These methods for preventive vaccination taken in connection with this principle, which is involved in

one of them—present almost unlimited possibilities in preventive medicine, and possess a significance the importance and far-reaching nature of which it is scarcely possible for us to comprehend.

Pasteur gives in addition an explanation as to the method of action of the virus in the living organism. He says: “It is possible to give a still further interpretation—an interpretation surely very strange at first thought, but which deserves the greatest consideration, especially as it is in harmony with certain results obtained in the observations of phenomena in the life of some other forms of the lower organisms, and especially of several of the pathogenic bacteria which give birth in their cultivations to a material which has the property of preventing their own further development.”

After referring to the micro-organisms of chicken-cholera, typhus in pigs, and the cultivation of *Aspergillus niger*, he continues; “Is it not possible that the rabid virus may be formed of two distinct substances, one of which is living and capable of multiplication in the nervous system, and the other is non-living having the power, when present in sufficient proportion, of arresting the development of the first? I have considered experimentally in a previous communication, with all the attention that it deserves, this third interpretation of the method of prophylaxis of rabies.”

I cannot conclude this portion of this paper without a reference to two interesting and important questions that arise in connection with this method of prophylaxis. The first of these is the possibility of transmission of the disease, by animals or the human being subjected to these inoculations, to other animals or human beings during the process of inoculation, or in any period after this time. Pasteur states that he has made no experiments or observations upon this point. The second question is as to the duration of the refractory condition to rabies after the series of inoculations has been completed. This period Pasteur believes to be not less than one year, and to be probably considerably longer than this, but no careful data upon this point are at present at hand.

What conclusions, now, are to be drawn as to the accuracy

of Pasteur's observations upon rabies and the efficacy of his method for the prevention of the disease in animals and man after bites by rabid dogs? Let us review rapidly the experiments that have already been made, and discuss briefly the assertions that are based upon them. Pasteur's first communication upon rabies was in 1880—more than five years ago. At that time he thought he had discovered a new micro-organism in the saliva of a child who had died of hydrophobia, and described a new disease as being produced in rabbits by inoculation with this germ. These observations were a little later shown to be incorrect, and were acknowledged to be so by Pasteur. Since that time he has been studying this disease constantly, and from time to time has reported more or less fully the results of his observations to the French Academy. His investigations have led out in many directions, and the conclusions reached in these experiments, as reported in his last communication to the Academy, have been the result of a gradual development extending over nearly six years of tireless investigation.

As regards the first person inoculated, of whom we have heard so much, it has seemed to me that the evidence is far from satisfactory upon which rests the conclusion as to the rabid character of the malady affecting the dog which bit the now famous Joseph Meister. The indications point rather in quite another direction. It is certainly very unlike the ordinary behavior of rabid animals to fall upon a person with such ferocity and persistency as must have been the case in this instance, when the unfortunate victim was bitten in no fewer than fourteen different places. Apparently the only evidence upon which rests the supposition that the dog was mad is the result of the autopsy, and that certainly does not constitute sufficiently satisfactory proof. But, however this may be, certainly far too much importance, in my opinion, has been attached to this case, and it seems to me that the strongest evidence of the efficacy of Pasteur's method for the prevention of rabies rests, not upon any results thus far obtained in the inoculation of human beings, but upon the results of his experiments upon dogs. If in a single series of experiments he has not only been able to render fifty dogs refractory

to rabies without a single failure, but also has succeeded in preventing the development of the disease in a large number of dogs after they had been bitten, both of which he asserts positively he has succeeded in doing, then the question as to prevention of the disease in the human being is only as to the method of application. For certainly dogs are far more susceptible and liable to the malady than human beings, the character of the disease is evidently the same in both man and dogs, and, if dogs can be brought into a refractory state to the disease, it is not assuming too much to conclude that the same is true in the human being.

The preliminary report of the commission appointed by the Minister of Public Instruction in 1884 to examine and report upon the results obtained up to that time is also of interest here. As incorporated in Tyndall's introduction to the life of Pasteur, it may be summed up as follows :

“Of six dogs unprotected by vaccination, three succumbed to the bites of a dog in a furious state of rabies.

“Of eight unvaccinated dogs, six succumbed to the intra-venous inoculation of rabic matter.

“Of five unvaccinated dogs, all succumbed to inoculation upon the surface of the brain after trepanning.

“Finally, of three-and-twenty vaccinated dogs, not one was attacked with the disease subsequent to inoculation with the most potent virus.”

Surely these results upon dogs are of a nature to at least attract the careful consideration and attention of scientific men throughout the world.

But, throwing aside the evidence which we have now at hand as to the efficacy of Pasteur's method—and I think we must admit that it is not altogether satisfactory in character—let us consider the probability of the correctness of these last observations from the light thrown upon the subject by his former work. Does it seem probable that the man who, in the earliest infancy of bacteriology, disclosed the nature and cause of fermentation, and established our knowledge of it on a firm foundation in the face of much opposition and skepticism—the man who disproved the theory of spontaneous generation, and laid the foundation

on which rests our whole system of antiseptic surgery, who discovered the nature of the plague in the silk-worms in France and devised the methods for its prevention, who discovered the principles underlying the method of protective vaccination in the disease of animals and who has prepared the only practicable vaccines, who has contributed as much as any man who has ever lived to our knowledge of micro-organisms and their relation to disease—does it seem probable that such a man has given nearly twenty years of continuous study to the consideration of rabies without achieving some substantial results? Or does it seem probable that he has been dealing all of these years with some form of septicæmia, as has been suggested, laboring under the delusion meanwhile that it was rabies? This I cannot believe, and, if it is not true, then Pasteur's conclusions must be in the main correct, for certainly no one will question his honesty.

Every great theory in science has been met by skepticism, opposition and ridicule. The theory of gravitation, the theory of evolution, the theory of undulation, the atomic theory of matter, the dynamic theory of heat—have all been compelled to fight their way to victory. So it has been with the germ theory of the infectious and contagious diseases. Many members of the medical profession, in spite of the indisputable facts that have been adduced to prove this, still refuse to accept it.

Pasteur's prophylactic method for rabies rests purely on empirical grounds, and can only be fairly judged by the practical results obtained by its use. So far as we know at present, these have sustained the profession of the learned discoverer, and, until they are refuted by further observations, I believe it is unjust to characterize this work of Pasteur's, as has recently been done, as being founded "on untrustworthy experiments and unsound reasoning," deserving "to be rejected and condemned in the interests of humanity as well as science." On the other hand, if future observations confirm the results that now seem to be at least probable, this discovery, added to his other achievements, will rank Pasteur as one of the greatest benefactors of his race that this generation has produced, and, from a scientific standpoint, it will be considered one of the grandest triumphs of the century.

VENEREAL DISEASES IN THE LOWER ANIMALS.

Read by Professor WALLEY before the Scottish Metropolitan Veterinary Medical Society.

Continued from page 175.

In the early part of the present year I was asked to examine a retriever dog in whom an obstinate eruption was presented on the skin covering the chin and around the eyes. I was informed that the animal had been under the care of another practitioner for some time, but that the treatment adopted had been unsuccessful. As my attention was only directed to this eruption, I did not think of looking further for the probable cause, though I was particularly struck by the peculiar character of the sores, and unhesitatingly gave the opinion that they were of a specific nature. By the application of naphthol ointment, an agent, I may observe, of great value in some forms of skin disease, and the administration of mercury, the sores rapidly improved and in fact were nearly healed, but several weeks subsequently the owner of the dog, noticing an eruption on the skin of the abdomen, again brought the dog to me for examination. One glance at this eruption satisfied me as to its resource and explained the origin of the sores around the eyes and on the chin; and, on extruding the penis, my suspicions were confirmed, the organ presenting on its external surface several well-marked venereal sores. These sores were treated, successively, with all the known topical remedies, not even excluding iodoform; and simultaneously, constitutional treatment was employed, but all to no purpose, and in the end the penis presented a most loathsome and horrible appearance. With the consent of the owner castration was performed. The good effects of the operation were as satisfactory as in the first case.

I may remark that I have been informed, within the last few days, by one of my pupils, Mr. Carruthers, of Wigton, Cumberland, that during the past summer an equally successful result was obtained by the adoption of this method of treatment in the case of a collie which had been the subject of venereal sores for a considerable period.

Gentlemen,—I have often felt that this treatment, heroic though it be, might be had recourse to with benefit in the human subject. I know that sentiment would oppose itself to the suggestion, but I would ask is it not better that a man who has been fortunate enough to contract this loathsome disease should be deprived of the means of infecting others, and be himself restored to at least a moderate degree of capacity for enjoyment of the pleasures of life than that he should be allowed to drag a miserable existence and remain a probable means of disseminating his infirmity?

The Abortive Treatment of Actinomycosis.

In recent issues of our professional journals, I observe that J. B. Gresswell has drawn attention to the treatment of actinomycosis by the application of phenol and iodine (iodized phenol.)

I may be pardoned if I suggest that he directs attention to this combination of disinfectants in such a manner as to lead to the supposition that it is new to the veterinary profession.

In a paper read by me about two years ago at Belfast, I directed attention to the great value of a combination of iodine and phenol as a local application in infective forms of inflammation, such as the inoculative leisons in pleuro-pneumonia and in gangarinos, and it was from observing the beneficial effects following its use under these circumstances, that I was led to advise its employment (to my pupils and to practitioners) in the abortive treatment of actinomycosis—a disease, I need scarcely remark, essentially local in its origin and capable of being arrested in its progress by purely local means. Amongst those to whom I recommended its use was Mr. L. Leach, who at the meeting of the Lincolnshire Veterinary Medical Association, held at Grantham in the early part of the year, informed me that he had successfully carried out this method of treatment.

During the past summer, while on a visit at the house of my preceptor, Mr. Kettle, of Market Drayton, I advised his assistant, Mr. Rickell, to carry out the treatment in a well-marked case in a cow. Mr. Rickell advises me that the treatment was successful.

The *modus operandi* of the treatment by means of which the disease is arrested is, I think, simple; both iodine and phenol are powerful fungicides and active irritants—as the former, they destroy the fungus to which the disease owes its origin; as the latter, they induce a plastic and consequently a localizing or circumscribing inflammation, which has the effect of arresting the extension of the fungus and the lesions to which it gives rise. The surgical operations recommended merely facilitate the application of the potential agents to which I have alluded.

In order to ensure the proper application of remedies, I have had made, by Messrs. Krohne and Sesemann, the following instruments:

(1) A *tongue scraper*, with which is combined (2) a *scarifier*—regulated as to depth by movable screws; (3) an *irrigator*, in the form of a pipette; and (4) a *pair of tongue forceps*, by the aid of which the tongue can be effectually secured (a difficult matter in cattle) and its further manipulation rendered easy. The *scarifier* I may observe, can be utilized for other purposes than the one for which it was designed, *e.g.*, for scarifying any œdematous swellings on the gums in lampas; while the *irrigator* may be used for similar purposes in the treatment of tumors or for exploratory aspirations.

Intestinal Parasite of Swan.

During the summer I was asked to make a post-mortem examination of the body of a swan with the object of discovering the cause of its death, which had been sudden.

On laying open the small intestines I observed a number of yellowish-colored bodies intimately attached to the mucous membrane and having the appearance of little masses of yellow pain but on the application of force I discovered that they were of an organic nature and attached by a pedicle to the membrane. One of my pupils, Mr. N. J. Doyle, who was standing near, suggested that they were parasites, and on removal from the intestine the true nature was readily discovered, and it was further confirmed on microscopical examination by Mr. Gray. From the character presented I came to the conclusion that the entozoon was a ditome, but through the kindness of Dr. Aitken, I was enabled

submit some of the specimen to Dr. W. E. Hoyle for identification, and by that gentlemen they were recognized as a species of *Echinorhynchus*, probably the *E. polymorphus*. Dr. Hoyle further informs me that they are found in the intestine of the duck and other water-birds, and that in their larval stage they inhabit small freshwater crustacea. They cling, he says, to the mucous membrane by the aid of a number of re-curved hooks or teeth situated on the proboscis.

In our domestic animals we are only, so far as I know, acquainted with one other species of the Acanthocephala or thorn-headed worms (to which this specimen belongs), and that is the *T. gigas* of the pig.

Whether in the swan these entozoa are the cause of much mischief or not, may, I think, be left an open question as, although they adhere firmly to the mucous membrane, they do not appear to induce any marked inflammatory action, nor did I observe any tendency to perforation of the bowel in the manner so often seen in the case of the analogous worm in the intestines of the pig. I also introduce to your notice specimens of a strongylus found by Mr. Percival Snaith (one of my pupils) in the stomach of a rabbit. The nematode has been recognized by Dr. Hoyle as the *strigosus* of Dugardin.

PLEURO-PNEUMONIA LEGISLATION.—It is announced from Washington that the Agricultural Committees of the two Houses have finally reached a definite conclusion on the subject of an appropriation for the stamping out of pleuro-pneumonia and other contagious diseases. They have decided to appropriate \$100,000 for the use of the Commissioner of Agriculture in carrying out the objects for which the Bureau of Animal Industry was created. He is not restricted in the number of agents that he may employ, but may engage the services of "as many persons as he may deem necessary," and is authorized to use any part of the sum appropriated which "he may deem necessary or expedient, and in such manner as he may think best, to prevent the spread of pleuro-pneumonia." All restrictions are repealed by the compromise agreed upon, and all responsibility for the execution of the

law is thrown upon the Commissioner. He is to act on his own will and judgment. The power to purchase and kill diseased animals is practically unlimited. Both committees having agreed upon the compromise, there is little doubt that both Houses will ratify it, and the President will sign it. The bill has met with considerable opposition, much of this due, doubtless, to the manner in which the work of the bureau has been conducted in the past and the character of some of the men connected with it. A radical change in this respect is needed to secure the hearty support which public measures of this kind should have.—*National Live Stock Journal*.

WHY PASTEUR'S VACCINE FAILS TO PREVENT HOG CHOLERA.*

BY D. E. SALMON.

(Continued from page 183.)

This communication will be devoted to a further consideration of the difference between the leading characteristics of the French disease called *rouget*, for which Pasteur's vaccine is prepared, and the American hog cholera.

3d. *Results of feeding with organs of diseased animals.*—Feeding the organs of hogs which have died of hog cholera to healthy swine has a most marked and fatal effect, if the healthy animals have not previously acquired immunity by exposure to the contagion. As this fact is contested by some gentlemen who have given the subject "much thought and attention," but whose facilities for observation appear to have been very limited, I give below a list of animals fed with contagious material, mostly organs of dead hogs, from November 18 to March 22, in our experiments at Washington. I would particularly commend this table to the kind and careful consideration of Mr. D. L. Thomas, who claims the distinction of being "the first to take a public stand that healthy hogs will not take swine plague from dead hogs." The animals fed were selected in most cases from herds that had

It has been exposed to the disease for several years, and the material was from hogs which had certainly died of swine plague—two points which it is very important to secure if positive results are expected from such experiments :

TABLE SHOWING RESULTS OF FEEDING SWINE-PLAGUE MATERIAL TO HEALTHY HOGS.

<i>No. of the animal.</i>	<i>Date of feeding.</i>	<i>Material Fed.</i>	<i>Died of Swine Plague.</i>	<i>Days between feeding and death.</i>
96	Nov. 18	Organs of dead hogs	Nov. 24	6
97	Nov. 18	Organs of dead hogs	Nov. 28	10
98	Nov. 28	Organs of dead hogs	Dec. 5	7
99	Nov. 28	Organs of dead hogs	Dec. 7	9
120	Dec. 5	Germ's f'm dead hogs	Dec. 13	8
145	Dec. 5	Germ's f'm dead hogs	Dec. 12	7
107	Dec. 9	Organs of dead hogs	Dec. 18	9
108	Dec. 9	Organs of dead hogs	Dec. 21	12
165	Jan. 8	Organs of dead hogs	Jan. 26	18
76	Jan. 28	Organs of dead hogs	Resisted	..
138	Jan. 28	Organs of dead hogs	Resisted	..
139	Jan. 28	Organs of dead hogs	Resisted	..
159	Jan. 28	Organs of dead hogs	Feb. 6	9
156	Feb. 18	Organs of dead hogs	Feb. 25	7
188	Feb. 25	Organs of dead hogs	March 12	15
149	March 5	Organs of dead hogs	March 24	19
158	March 5	Organs of dead hogs	March 21	16
168	March 5	Organs of dead hogs	March 28	23
175	March 5	Organs of dead hogs	March 22	17
189	March 5	Organs of dead hogs	March 19	14
151	March 13	Organs of dead hogs	March 26	13
152	March 13	Organs of dead hogs	April 3	21
167	March 13	Organs of dead hogs	April 1	19
161	March 13	Organs of dead hogs	April 14	32
170	March 13	Organs of dead hogs	April 4	22
176	March 13	Organs of dead hogs	March 29	16
190	March 13	Organs of dead hogs	March 25	12
115	March 19	Organs of dead hogs	April 8	20
117	March 19	Organs of dead hogs	April 9	21
162	March 19	Organs of dead hogs	March 29	10
169	March 19	Organs of dead hogs	April 10	22
173	March 19	Organs of dead hogs	April 5	17
178	March 19	Organs of dead hogs	April 6	18
172	March 19	Organs of dead hogs	April 6	18
192	March 19	Organs of dead hogs	March 31	12
193	March 19	Organs of dead hogs	March 29	10
174	March 22	Organs of dead hogs	April 16	25

Total number fed, either with organs of dead hogs or with germs cultivated from such organs, 37; number of deaths result-

ing from this feeding, 34 ; proportion of animals which contracted swine plague and died as the result of taking contagion from dead hogs into their system, 92 per cent. The three animals which resisted the contagion in the above experiments had previously been exposed to the disease ; and it consequently follows that every one of the thirty-four pigs which had not been exposed before feeding contracted the disease in so severe a form as to produce fatal results.

In the experiments of Lydtin with the Pasteur vaccine, the vaccinated animals were fed with the organs of hogs which had died of *rouget* to test the immunity which they had acquired. At the same time check animals, which had not been vaccinated were fed with the same virus to bring out its effects on susceptible animals by contrast with its effects upon those which it was supposed were made insusceptible by the vaccination. The effect of feeding these check animals may, consequently, be compared with our feeding experiments related above, most of which were also with check animals in similar experiments. I have collected these results in the following table :

TABLE SHOWING RESULTS OF FEEDING ROUGET MATERIAL TO HEALTHY HOGS.

<i>Place of experiment.</i>	<i>No. of animals fed.</i>	<i>No. which died.</i>	<i>Days between feeding and death.</i>	<i>No. sick which recovered.</i>	<i>Remarks.</i>
Heidelberg.....	4	0	.....	0	{ Fed twice without result.
Langenzell.....	4	0	.....	0	
Zuzenhausen.....	2	1	6	1	One feeding.
Neckarbischofsheim.....	3	0	.....	0	Fed three times.
Treschklingen.....	3	1	3	0	One feeding.
Lohrbach.....	4	0	.....	1	Three fed twice.
Stein.....	4	1	4	2	One feeding.
Dammhof.....	3	1	4	0	One feeding.
Rostatt.....	3	1	4	0	One feeding.
Aspichhof.....	2	0	.....	0	Fed twice.
Geisingen.....	4	2	3 and 4	0	One feeding.
Messkirch.....	3	1	4	0	Two fed twice.
Neidingen.....	2	2	4	0	One feeding.
Pforzheim.....	4	0	.....	0	Two fed twice.
Total.....	45	10		4	

It will be noticed at a glance that there is a very great difference in the results of feeding organs of hogs dead of hog cholera and those dead of *rouget*, but placing the figures side by side will make this difference more perceptible, as is seen below :

TABLE SHOWING DIFFERENCE IN RESULTS OBTAINED BY FEEDING ORGANS OF HOGS DEAD OF HOG CHOLERA AND ROUGET.

	<i>Rouget.</i>	<i>Hog Cholera.</i>
Total number fed.....	45	37
Number dead from feeding.....	10	34
Percentage dead from feeding.....	22	92
Weeks and recovered.....	4	0
Shortest period between feeding and death.....	3	6
Longest period between feeding and death.....	6	32
Average period between feeding and death.....	4	15

This table brings out a very striking difference in the susceptibility of hogs to these two diseases when the virus is administered in this way. The proportion which died from hog cholera seen to be more than four times what it was in the *rouget* experiments; the shortest period between feeding and death was only half with *rouget* what it was with hog cholera, and the longest period was with hog cholera more than five times what it was with *rouget*, while the average period between feeding and death was nearly four times as long with hog cholera as with *rouget*. Considering the considerable number of cases with each disease these differences are so remarkable as of themselves to make us suspect that the diseases experimented with in the two cases are not identical.

4th. *Effects of the virus on pigeons and guinea pigs.*—A method long used in experimental medicine to determine the nature and identity of diseases is the inoculation of other species of animals than those which are spontaneously affected. Thus Cloing, Cornevin and Thomas, in their remarkable investigations which demonstrated that the two diseases called charbon *ver* and symptomatic charbon were not essentially identical, as

had been supposed, but were entirely different and distinct, based one line of their argument upon the different effects which followed the inoculation of certain species of animals with virus from the two sources. Rabbits were found very susceptible to charbon fever, but very refractory to symptomatic charbon, and bovine animals were equally susceptible to the former disease at all ages, while their susceptibility to the latter was confined to the period between six months and three or four years of age.

Now, if we study the virus of *rouget* and hog cholera from the same point of view we will find even stronger evidence that they are distinct from each other. *Rouget* virus is extremely fatal to pigeons, and one of these birds inoculated with only a fraction of a drop of blood from an affected animal is almost certain to contract the malady and die from it. The experiments of Pasteur, Schutz, Lydtin, and many others demonstrate this fact. On the other hand Klein has made many experiments from which he maintains that pigeons are entirely insusceptible to the virus of pneumo-enteritis of hogs in England. The writer's experiments in this country show that while pigeons are quite refractory to hog cholera virus they will contract the malady if inoculated with a large dose of a virulent culture.

Again, the experiments of Schutz, Loeffler, Cornevin and others show very conclusively that guinea pigs are entirely insusceptible to the virus of *rouget*, and they cannot be made to contract it even when inoculated with enormous doses. On the other hand Klein found these animals partially susceptible to the contagion of pneumo-enteritis. In the experiments of the Bureau of Animal Industry guinea pigs have been found *extremely susceptible* to the virus of hog cholera, and some of these animals have sickened from doses of less than one-two-hundred-and-fiftieth of a drop.

Unless I am greatly mistaken, these experiments are, of themselves, sufficient to show a profound and radical difference in the nature of the virus from these diseases which Dr. Liautard considers identical. I do not believe that in the whole domain of pathology an instance can be cited where the virus of any one

sease, affecting the same species of animals, differs so widely in characters, even though found in different countries.

In another paper equally clear distinctions of a different nature will be pointed out.

5th. *Difference in symptoms between rouget and hog cholera.* Without going into details we desire to call attention to the fact that the common names of the plagues of different countries indicate the most characteristic difference between these diseases. Thus in France it is called *mal rouge* (red disease), *rouget*, *erysipe contagieux* (contagious erysipelas), and in Germany we find the common name to be *rothlauf*, which is equivalent to erysipelas. All of these names indicate the most prominent symptom of the disease, viz.: the red and erysipelatous appearance of the skin. On the other hand, the American name, hog cholera, while it may not give an entirely correct idea of the nature of the malady, certainly indicates that its most constant and prominent symptoms are due to an affection of the bowels.

It is true that redness of the skin is sometimes seen in the American disease, but it is not at all constant, and it is only in some instances that it is sufficiently intense to be called erysipelas. Disturbance of the bowels is also seen at different times in *rouget*, but, like redness of the skin in hog cholera, it is by no means a constant symptom. In these characters there is a very marked difference in the two diseases.

6th. *Difference in the appearance of the organs after death.* The post-mortem examination justifies the distinction which has been drawn above from the symptoms. One of the most constant and characteristic lesions of hog cholera is ulceration of the large intestines—an ulceration which is almost invariably present except in those cases which succumb within a day or two after the beginning of the attack. This ulceration is so apparent, so extensive, so impossible to overlook that we cannot believe it would escape the eyes of the Continental veterinarians who have studied their diseases so thoroughly. Neither Lafosse, Bénion, Zundel, Miller or Lydtin mention ulceration of the large intestines. Gottelius found ulceration in one case, and Cornevin states that

in acute *rouget* there is ordinarily no changes in the cæcum; in the colon the changes are not as constant as in the small intestine; and then he quotes Klein's description of the ulcers observed in England. In the chronic form of *rouget* Cornevin makes no mention of these ulcers, although in this form of hog cholera they are almost invariably the most prominent lesion. We consider this to be a radical and essential difference between the two diseases, and we have failed to find any explanation of it which would justify us in considering *rouget* and hog cholera as identical diseases. The pneumo-enteritis of England, which has been so well described by Klein, is much more closely allied to our hog cholera and may be identified with it, but it certainly is very different from *rouget*.

7th. *These diseases caused by different microbes.*—The microbe of *rouget* is now very well known and has been thoroughly studied. It is peculiar in its appearance, in its manner of growth, and in the way in which it affects animals. It is a fine bacillus, resembling the bacillus of the septicæmia of mice; it multiplies in the blood and in the various organs of the body, and is very easily detected when examinations are properly made. We have this microbe in cultivation in our laboratory, obtained from the Pasteur vaccine; have made inoculation experiments with it and demonstrated its presence in the inoculated animals. We have in this way confirmed the work of the European investigators, and have satisfied ourselves that the disease which it produces is very different from that produced by hog cholera virus. This germ we have never found in any case of hog cholera.

The microbe of those cases of hog cholera which we have studied—and they are now numbered by hundreds—is an entirely different organism; it differs radically in shape, method of growth in various substances and in all its characters, from the bacillus of *rouget*. After learning its peculiarities by long study we find it an easy matter to detect it in the organs of diseased swine; it is easily cultivated in the laboratory, and produces very marked and uniform effects when fed or inoculated.

RESUME OF DIFFERENCES BETWEEN HOG CHOLERA AND ROUGET.

*Hog Cholera.**Rouget.*

Period of incubation from five to twenty-one days; average in summer seven days and in winter fourteen days.	Period of incubation from one to six days; average three days.
Average duration of disease eight to ten days.	Average duration of disease two days.
Proportion which die from feeding upon organs of diseased animals, 90 per cent.	Proportion which die from feeding upon organs of diseased animals, 20 per cent.
Average period between such feeding and death fifteen days.	Average period between such feeding and death four days.
Guinea pigs very susceptible, pigeons refractory.	Pigeons very susceptible; guinea pigs entirely insusceptible.
Ulcers of large intestines almost constant; skin symptoms exceptional.	Inflammation of skin almost constant; ulcers in large intestines very rare.
Bacillus of <i>rouget</i> not present, but instead of it an entirely distinct microbe.	Caused by a fine bacillus, well known and easily demonstrated.

In the above we have attempted to give an unbiased statement of the reasons which have led us to consider *rouget* as an entirely different and distinct disease from our hog cholera. These reasons appear to justify this view, and the differences pointed out are so radical that we are unable to harmonize them. The fact of the plagues being caused by two distinct germs is of itself sufficient to separate the diseases; but if we did not know this or refused to admit it there still remains sufficient differences in the other characters to make it necessary for us to consider them as distinct maladies.

Here, then, is the true reason why Pasteur's vaccine fails to prevent hog cholera—it is the virus of another and an entirely distinct disease, and as an attack of one disease does not protect from another disease, so Pasteur's virus cannot prevent hog cholera.

Since writing the above we have received the latest report of the German Imperial Health Office, and in that we find a report of investigations of *schweineseuche* (swine plague) by Dr. Schutz, which furnishes complete and unequivocal confirmation of our views. He has demonstrated that *schweineseuche* and *rothlauf* are entirely distinct diseases, with different symptoms and caused by different species of microbes. We commend that report to the careful consideration of the gentlemen who have felt so certain that we were wrong in making a distinction between *rouget*

and hog cholera, and we tender the gratuitous observation that it would still be premature to jump to the conclusion that even the German *schweineseuche* is identical with our hog cholera.

REPORTS OF CASES.

FRACTURE AND SYNOVITIS OF THE TEMPORO-MAXILLARY JOINT—RECOVERY.

BY J. P. WILSON, D.V.S.

Having treated a case of open joint, which resulted favorably, I concluded to report it.

On April 2, 1886, a two-year-old filly was brought to me for examination. The history was as follows: about September 20, 1885, the animal was kicked on the temporo-maxillary articulation, and was put under treatment by an empiric practitioner. The treatment consisted of opening the wound with an ordinary pocket knife, and injecting into it with a very small syringe once daily, a carbolic solution. The above treatment was kept up for six months. The animal was plethoric when first injured, but had become emaciated to a great extent. Mastication was evidently performed with great pain, and the muscles of mastication on the injured side were atrophied. The wound was discharging very little pus, but it had a very offensive odor characteristic of necrosis. From the repeated cutting which had been employed in the former treatment the cicatrised tissue had formed to the extent of an inch and a half in thickness, so that a diagnosis was difficult until some of it was removed. But by the use of the probe, which was with difficulty introduced, a diagnosis of the fracture was made involving the temporo-maxillary articulation.

On April 3d the animal was cast, and an incision made so as to remove the indurated tissue to the extent of two inches in circumference, when a comminuted fracture of the inferior maxilla was discovered, the whole of the condyle being detached. The detached pieces of bone were removed, and the fractured surface of the inferior maxilla that had become necrosed was scraped, the wound dressed with a dilute solution of hydrochloric

id and filled with oakum saturated with a solution of carbolic acid. The animal was then allowed to get up, was given some hay, which it masticated with comfort compared to the manner in which it masticated prior to the operation.

April 4th.—Oakum removed and wound washed with carbolic solution; animal eats about two quarts of oats at a feed, and a reasonable amount of hay.

April 5th.—The necrosed portion of inferior maxilla scraped and dressed with a weak solution of hydrochloric acid; appetite about the same as yesterday.

April 6th.—Wound begins to appear healthy; very little odor of necrosis; dressed with carbolic solution; animal given tonic powders in the feed.

April 7th.—Wound doing well; the odor of necrosis gone; considerable pus, and plenty of it; dressed with carbolic solution; appetite improving.

The animal was given tonic powders twice daily in the feed until April 20th. Its appetite became ravenous. The wound was dressed twice daily with carbolic solution until April 25th, when it had to be enlarged externally in order to introduce the syringe, which had a small nozzle. On April 27th injecting was abandoned, and May 2d the patient discharged with wound completely healed. I saw the animal June 10th and it was doing well.

SANITARY LEGISLATION.

QUARANTINE PROCLAMATION BY THE GOVERNOR OF WYOMING.

Gov. F. E. Warren of Wyoming has issued a quarantine proclamation, under date of July 8th, from which we extract as follows:

WHEREAS, A certain contagious or infectious disease, called euro-pneumonia, has become epidemic in certain localities, to wit: in the counties of Putnam, Westchester, New York, Kings, Richmond and Queens, in the State of New York; in the counties of Philadelphia, Bucks, Montgomery, Delaware, Chester and Lan-

caster, in the State of Pennsylvania; in the counties of Bergen, Hudson, Morris, Essex, Union, Somerset, Hunterdon, Middlesex, Mercer, Monmouth, Ocean, Burlington, Camden, Gloucester, Passaic and Atlantic, in the State of New Jersey; in the county of Newcastle, in the State of Delaware; in the counties of Cecil, Harford, Baltimore, Howard and Carroll, in the State of Maryland; in the District of Columbia; in the county of Fairfax, in the State of Virginia; in the counties of Callaway, Boone, Cole, Audrian, Montgomery and Osage, in the State of Missouri, and in the county of Travis, in the State of Texas; and

WHEREAS, It is a well-established fact that cattle from the following States, viz.: Florida, Alabama, Mississippi, Louisiana, and from portions of Texas, Indian Territory, Tennessee, Arkansas and South Carolina, have the capacity to infect cattle of the states and territories lying to the northward of them with a fatal disease, known as Texas or splenic fever, especially when cattle from such localities have been brought to the states and territories with such speed as to prevent their losing the power to communicate said disease; and

WHEREAS, Owners of cattle from said infectious districts are in the habit of driving such cattle a portion of the way and then shipping them to Wyoming Territory, to the danger and detriment of Wyoming Territory; * * *

WHEREAS, Neat cattle from said infected districts have been, at divers times since the discovery of the existence of said disease therein, sold and transported to other sections, without any regard paid to said disease, or the exposure of such cattle thereto, very many of which are now held and owned by persons whose intention it is to transport the same into or through this territory, and by reason of such unrestricted traffic, it is impossible to determine, with the certainty the gravity of the situation demands, without the aid of such owners or persons in charge, whether the said cattle thus intended for Wyoming, or for transportation through said territory, came from or through any of said scheduled localities or not, or whether they, or any of them, have been exposed to said disease or not; either in said localities or in others not herein specified. * * * * *

Therefore, By virtue of the premises aforesaid, and pursuant said statute, I, Francis E. Warren, governor of the territory of Wyoming, do hereby forbid the importation into or transportation through this territory of any neat cattle that have been brought from any place lying east of the 104th degree of west longitude, which is the east boundary of Wyoming Territory, except only on the conditions and under the restrictions following, that is to say :

1. That said cattle shall only be brought by rail, and shall first be examined by the territorial veterinarian or his deputy at Cheyenne, or such place as he may designate, and if found on inspection to be free from any symptoms of any contagious or infectious disease, then, and in that case, it shall be the duty of the owner or person in charge of said cattle to reasonably establish the following facts in relation thereto, viz.:

That said cattle did not come from or through any of said scheduled localities; and that none of said cattle have been exposed to said disease within four months next preceding their shipment.

2. Upon the truth of each of the foregoing being made manifest to said veterinarian, he shall give to said cattle a certificate, citing the facts thus proven, and also of his examination thereof, together with a careful description of said cattle; whereupon said cattle shall have the freedom of this territory, and not before; and until such certificate shall be given them, they shall be held in said quarantine yards until such time as the veterinarian shall be satisfied by lapse of time of their freedom from disease, such period of detention to be not longer than ninety days next ensuing their arrival, and if after the expiration of such time they shall not show any symptoms of any infectious or contagious disease, they shall then be allowed the freedom of the territory. * *

NEW MEMBERS OF THE PROFESSION.

HARVARD VETERINARY SCHOOL GRADUATES.

At the examination of candidates for graduation at the Veterinary Department of Harvard Medical College, held in June last,

the following gentlemen received their degree of D.V.M., Doctor of Veterinary Medicine :

A. N. Bigelow.....	Norwood, Mass.
Daniel Lee.....	Boston, Mass.
W. H. Smith.....	Hyde Park, Mass.
W. H. Way.....	Chelsea, Mass.
K. Winslow.....	Boston, Mass.

CORRESPONDENCE.

A VETERINARIAN WANTED.

Dear Doctor.—Having a good practice, and getting along in years, and having practiced my profession about forty years, I wish to secure a helper, with a view of retiring. Want a single man, of good moral character, and a graduate.

I would be glad to correspond with such a one as above.

Yours very respectfully,

P. O. Box 721, GENESEO, ILL.

W. J. SMITH.

SOCIETY MEETINGS.

CONNECTICUT VETERINARY MEDICAL ASSOCIATION.

At the regular meeting of the Connecticut Veterinary Medical Association, held in New Haven on May 4th, the following gentlemen were present: Dr. E. C. Ross, (President), Drs. W. J. Sullivan, A. A. Tuttle, Nathan Tibbals, E. A. McLellan and Thos. Bland.

The minutes of the previous meeting were read and approved.

A letter was read from Dr. W. D. Critcherson, in which he denied ever having been a member of the Association.

After due discussion, the Secretary was instructed to forward the Doctor a true copy of all letters received and to state that the Association considered him a member.

The committee appointed at previous meeting to draft desirable alterations in the By-Laws made their report, which was accepted.

It was unanimously agreed that we shall be known as the Connecticut Veterinary Medical Association, and not Society, as previous.

Dr. Julius E. Gardner was unanimously elected to membership.

Dr. J. G. Knox was proposed for membership by Dr. E. A. McLellan.

Dr. A. L. Brown was not present to read his paper on Aryoturia, but had duly forwarded it to the Secretary to be read at the meeting.

Although the essayist did not advance anything that might be considered new, still, the subject was treated in the minutest detail. After due discussion a vote of thanks was proposed the essayist.

Dr. A. A. Tuttle will read a paper at next meeting, to be held August 3d.

THOS. BLAND, *Secretary*.

NEWS AND SUNDRIES.

SUBSCRIPTION TO PASTEUR INSTITUTE.—The total amount subscribed to date to sustain the Pasteur Institute in France is \$113,999. The Sultan has presented Pasteur with the grand order of *edjidie*, and \$2,000, and will send a commission to Paris to study the methods of rabies prevention.

A GOOD RESULT.—Sixteen of the wolf-bitten Russians who were treated by Pasteur have reached Smolensk on their way home, and being in perfect health, have telegraphed their gratitude to their preserver.

PASTEUR'S LABORATORY.—The *Evening Post* quotes as follows from the *Pall Mall Gazette*: "A most extraordinary museum has just been opened in the Rue Vauguelin. It is difficult to say whether it should be called a museum, or a factory, or a farm, or a menagerie. It is in fact all four combined, and grouped together for a purpose hitherto untried, and presenting an appearance hitherto unparalleled. These are the new headquarters of M. Pasteur, and here are to be found cow-houses, sheep-folds, fowl-walks, rabbit-hutches, and dog-kennels. They are all, moreover, fully occupied. On one floor is a laboratory, where the vaccine cups and preparations are made up. Above it a museum, where specimens connected with the new cure are exhibited. There are operating-rooms and rooms for post-mortem investigations and dissecting purposes. Two of the kennels are devoted to dogs in various interesting stages of early or advanced rabies. 'Hen cholera' is communicated, watched, and cured in the fowl-house. The cattle exhibit various stages of vaccination. Human beings have also their provided quarter. A spacious waiting-room is set apart for patients, who troop in daily in picturesque groups—ac-

according to the French press—representing all nationalities. In the mean time the great savant occupies the former quarters of the Pasteur Institute in the Rue d'Ulm, and devotes himself in dignified seclusion to scientific research."

DISCOVERY OF THE MICROBE OF RABIES.—Dr. G. F. Dowdswell, announces in *The Lancet* that he has discovered the microbe of rabies. He says: "It is micrococcus, not very minute, and of the usual form. It stains, however, with some difficulty; and this accounts for its having hitherto escaped observation. In the cases of dogs which I have as yet examined, its principal seat is evidently the central canal of the spinal cord and medulla oblongata; thence it pervades the other tissues of the central nervous system, occurring (sometimes in vast masses) around the walls of the blood-vessels, and in some cases within the vessels among the red blood-corpuscles. In the cortex of the hemispheres I have found it, but in very small numbers, and, so far, only in the perivascular and peri-cellular lymph-spaces. In the cerebellum I have not found it at all, neither have I as yet succeeded in finding it in the salivary glands. I shall shortly publish the methods by which it may be stained with certainty. I must, however, state that it does not stain by hæmatoxylin, either with or without a mordant, as asserted by Fol. I have repeated his methods carefully. Neither does it occur within the nerve-fibres, as he states; and, lastly, it is fully three times the dimensions which he gives. I may add that it does not occur in the same situation, treated by the same methods, in normal animals. In the one case of a rabid dog, which I had examined to control my previous observations, the tissues were placed in alcohol so shortly after death as to preclude the possibility of the occurrence of septic organisms. In addition to which, all saprophytes, as far as yet observed, stain very readily with the usual aniline dyes, which this microbe does not. I must point out, in justice to the genius of Pasteur, that these observations on the occurrence of the microbe go far to confirm his statement of the seat of the virus; it may further afford a means of diagnosis in any doubtful case." Preparations of the microbe were shown at the meeting of the Royal Microscopical Society on the 9th ult.

AMERICAN VETERINARY REVIEW.

EDITED AND PUBLISHED BY

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AND OTHER VETERINARIANS.

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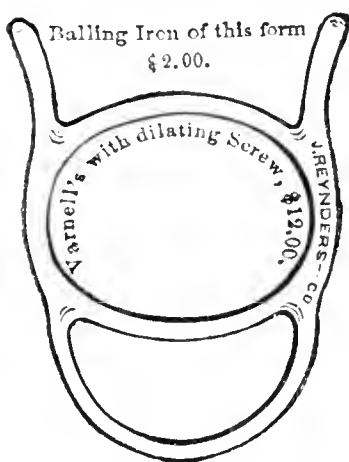
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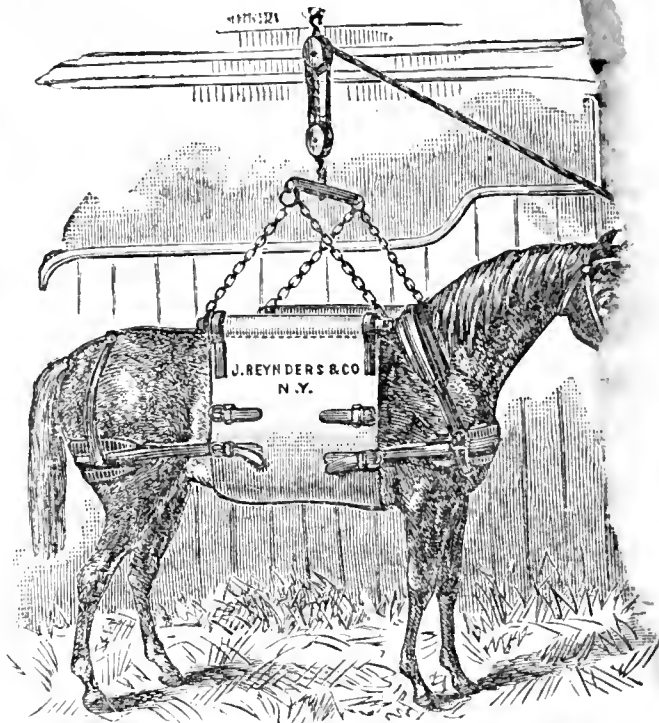
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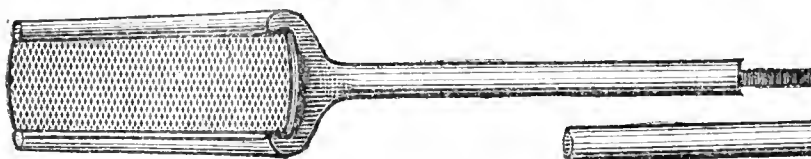


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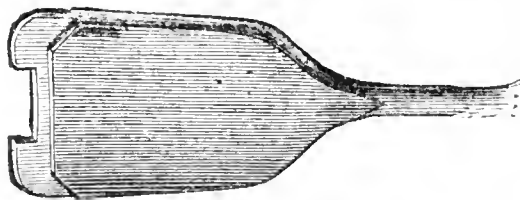
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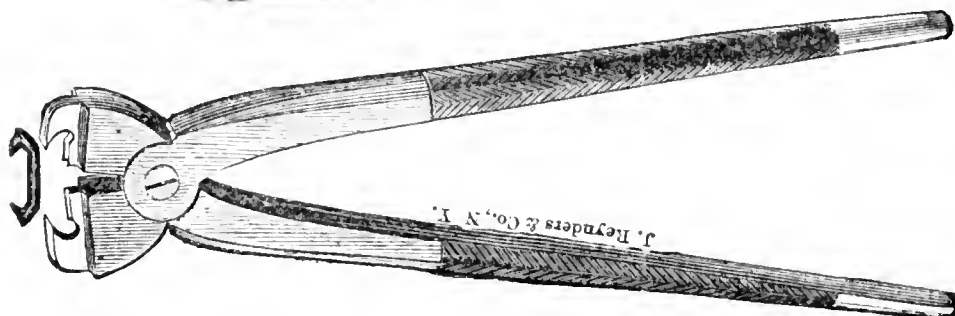
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AMERICAN VETERINARY REVIEW,

SEPTEMBER, 1886.

EDITORIAL.

CANKER OF THE FOOT—its pathology yet in doubt—Plasse and Megnin were first to consider it produced by micro-organisms—Prof. Nocard is inclined to be of the same opinion—a valuable case on record—after a period of eight months standing, the disease is radically cured in a few hours—solution of bichloride of mercury the best antiseptic—the treatment ought to be tried. LESIONS OF THE STOMACH IN RELATION TO THE DIAGNOSIS OF RABIES—almost all the other lesions doubtful on account of their vague appearance, and some because of their absence—the stomach is the organ most commonly the seat of characteristic lesions—its contents take precedence over everything else—it is the only reliable indication of the affection—Prof. Axe's experience—the result of post-mortems made in twenty-two typical cases. REGULATING THE PRACTICE OF VETERINARY MEDICINE IN FRANCE—more empirics in that country than in any other—various attempts made near the General Government—they always failed. England has succeeded where New York State—new bill presented to the French Government—it gives recognition to self-made practitioners of five years practice under an examination clause—Article III of the bill interesting to foreign veterinarians—a wise measure against American degrees. POLYURIA AS A MEANS OF DIAGNOSIS OF TUBERCULOSIS IN THE HORSE—natural tuberculosis may exist in the horse—acknowledged error made by Prof. Nocard—pulmonary lymphadema—polyuria observed in six cases of tuberculosis out of eight—it may, it is sufficient to make a diagnosis—reports on record confirming the same. NATIONAL VETERINARY ASSOCIATION OF GREAT BRITAIN—the fourth annual meeting—interesting papers read during two days that it lasted. HOG CHOLERA—Dr. Billings is appointed to investigate it in Nebraska—his inquiries to farmers—to veterinary surgeons. ANTHRAX—vaccination the prophylactic treatment—why is it that American practitioners ignore it—Dr. Faust, of Poughkeepsie, the first to try it. UNITED STATES VETERINARY MEDICAL ASSOCIATION—the next annual meeting on the third Tuesday of September. PRIZES OF THE U. S. V. M. ASSOCIATION AND OF THE REVIEW—another paper.

CANKER OF THE FOOT is an affection concerning the nature of which pathologists generally do not yet seem able to agree. But there are some facts in its history which leave no room for doubt or disagreement regarding the tenacity of the disease,

its rebellious character, and its resistance to all forms of treatment. Taking into consideration its modes of appearance and the methods of its progress; its facility of development in an apparently healthy hoof; its metastatic character, shown in its disappearance from one foot only to be transferred to another, and its return to the same foot again, or its appearance in a different one; and principally, the characters revealed by microscopic examination, of the discharge, and of the pathological structures of a foot thus affected—the theory of Plasse and Megnin was for some time accepted as the correct one, and it was adjudged a place in the classification of parasitic affections. Professor Nocard, of Alfort, has recently made some observations in the same direction, and while he is not yet prepared to definitely settle the question, he reports amongst his cases one especially, of a very interesting character, which in its results would seem quite confirmatory of the theory of micro-organism. In this case a valuable stallion had been for more than eight months suffering with canker of the right fore foot. The lacunæ of the frogs and the sole was extensively diseased, the walls being undermined to a large extent on the outside quarter and outside toe. In fact, the disease had become so extended that the animal was quite unfitted for any kind of work by his excessive lameness. Practitioners are aware that, as a rule, canker, even when extensive, is seldom accompanied with lameness, and that it is only present when the tissues are largely diseased. The treatment followed by Prof. Nocard at his clinic was very simple, and was followed by such excellent results that it certainly recommends itself to the practitioner.

“The foot being well pared, and the diseased structures well exposed, the animal was then secured in the stocks, with his right fore foot raised and tied up. Then an atomized spray was thrown with force, forming a vapor of a solution of bichloride of mercury, one part in one thousand (Van Svietten's fluid). This was kept up continuously for two and a half hours. Waiting then for about fifteen minutes, to allow the parts to dry, the dressing was concluded with the application for about ten minutes, of a powder of iodoformed ether, made with the hand. The animal was

n returned to his stall without shoe or dressing. During
ht days he received forty grammes (about nine drachms) of
lwer's solution in his food. That was all the treatment. Re-
ery was radical."

As far as our personal experience in a city practice goes, and
far as we have been able to ascertain, canker is not a very
nmon affection with us. But taking into consideration the
t of its possible existence to a serious extent in cities where
genic conditions are not well followed, we have thought that
presentation of this case might prove to be of advantage to
readers, hoping, also, that some of them might be induced to
e the treatment a trial, and to favor us with a report of the
ults.

LESIONS OF THE STOMACH IN RELATION TO THE DIAGNOSIS OF
BIES.—The importance of the lesions or abnormalities found
the post-mortem examinations of rabid animals which had not
en seen during life, cannot be denied. Indeed, it is acknowl-
ged that the observation of whatever changes may be found in
e internal structures of the cadaver are, in fact, the surest
ans of the confirmation of a correct diagnosis. In some few
eases the post-mortem lesions are very often vague and of
ubtful importance, or obscure, and not uncommonly absent.
is is especially the case in those forms of disease which are
ssified amongst nervous disorders, though more on account of
eir peculiar manifestations than of their pathological lesions, as
e at least as ordinary observation by the naked eye extends.
ese lesions, however, are easily rendered evident by microscopic
aminations. The natural and important inference to be derived
om this condition is the lesson it should teach of the error of
erlooking the value of those lesions when their existence is
ertained.

Rabies is perhaps of all diseases the one to which these re-
arks most emphatically apply; for every one knows how few
sitive lesions can be depended upon in the diagnosis of this
alady in the cadaver of the dog. One lesion in particular, how-
er, has been so commonly found, and its presence so generally
cognized by all writers on this subject, as well as by all careful

observers, that it has been admitted and established as almost a pathognomonic lesion of rabies. We are referring now to the condition of the stomach, and to the presence of foreign bodies within its walls. To quote the language of Prof. J. Axe, of London: "As an aid to diagnosis, indeed, the contents of this organ take precedence over everything else, and constitute the only reliable indication of the affection which a post mortem examination affords." In *The Veterinarian*, Prof. Axe relates his experience in the post mortem inspection of not less than two hundred dogs, and in relation to the value, in the diagnosis of rabies, of the lesions found in their stomachs, relates the following as the description of the contents and condition of that organ in twenty-two well marked cases of the disorder:

"1. Portions of straw; two fragments of linen rag; no food; mucous layer coated with thick tenacious mucus, and somewhat hyperæmic.

"2. Pieces of wood shavings; a small quantity of sawdust and a piece of bone; no food.

"3. A little grass and straw, and a small particle of coal. Mucous membrane intensely hyperæmic towards the pyloric extremity, and slightly so over two or three inches of the duodenum.

"4. Fragments of stick and some fibres of cocoa matting; small quantity of semi-digested fat; no other food. Mucous membrane healthy.

"5. Grass, straw and horse excrement; no food; general hyperæmia of the mucous layer, with scattered ecchymoses along the summits of the folds.

"6. Straw, hairs, and portions of newspapers; about a ounce of tendinous tissue in a semi-digested state; no other aliment; patchy hyperæmia around pylorus; membrane coated with thick mucous and croupy exudate.

"7. Straw, splinters of wood, some wool, and a stone; no food; mucous membrane normal.

"8. Earth, portions of rushes, and a few hairs; no food; blood blotches and ecchymoses distributed over the entire mucous surface, with several small areas of necrosis.

" 9. Straw, dog's excrement, and a small portion of woolen cloth; two fragments of bone, and about one ounce of semi-digested flesh; mucous layer slightly reddened and covered with thick opaque mucous.

" 10. Cocoa matting; wool; no food; lining of membrane generally hyperæmic, especially marked near the pylorus.

" 11. Straw; horse excrement; no food; mucous layer healthy.

" 12. Earth and grass; no food; slightly hyperæmic towards pylorus; linear hæmorrhage along the summits of gastric folds.

" 13. Straw and portions of cabbage leaf; no food; mucous membrane normal.

" 14. Fragments of stick, some hair, very small quantity of semi-digested bread; dense blood; blotches and foci of hæmorrhagic necrosis.

" 15. Straw; no food; petechial spots along summits of mucous folds.

" 16. Feathers and hay; no food; mucous layer normal.

" 17. Straw and some semi-digested paper; no food; mucous membrane healthy.

" 18. Stomach empty; lining of membrane coated with tenacious mucous; slight œdema and congestion.

" 19. Horse excrement and dead leaves; no food; no perceptible vascular change.

" 20. Straw, fragments of wood and a small nail; no food; mucous layer generally hyperæmic.

" 21. Straw, dog's excrement, and a portion of the claw of a cat; no food; mucous membrane studded over with minute points of capillary hæmorrhage.

" 22. Wool, fibre of door-matting, and small piece of leather; no food; mucous membrane not perceptibly altered."

REGULATING THE PRACTICE OF VETERINARY MEDICINE IN FRANCE.—The complaints and protests of regular veterinarians against the unrestrained freedom with which incompetent persons are permitted to practice veterinary medicine, and to assume the duties belonging properly to none but duly qualified practitioners,

have been more numerous and emphatic amongst the scientific veterinarians of France than those of any other nation. The mother-land of veterinary science; the country where the first veterinary school was established; it is yet, within her limits, probably, that quackery most extensively flourishes and imposters most numerous abound. While her large cities may be free from empirics, the smaller towns and country districts are crowded with these parasites of the profession. Educated and accomplished veterinary surgeons have time and again complained of this disgraceful state of things, which allows ignorance and presumption to compete with skill and experience. Veterinary societies, veterinary schools and veterinary journals have in many instances called the attention of the government to the subject and persistent demands have been made for a law for the regulation of the practice of veterinary medicine. No attention, however, has yet been paid to the general complaint, and the condition continues unchanged to-day.

England has been for many years in the same condition, and while she may not be as free from empirical pretenders as she might, the practice of veterinary medicine is, we believe, nevertheless favored with quite a fair amount of protective regulation and the title of Veterinary Surgeon, and the standing of the regularly educated practitioner well vindicated by the uniform degree granted to the graduates of the various schools. This, it is known, has been accomplished in England by the recognition which has been obliged to grant to practitioners who, though not graduated, had been in practice for a stated number of years. Unless we misunderstand the law of England, it now prohibits the assumption of the title of Veterinary Surgeon by any person not registered as a regular member of the Royal College of Veterinary Surgeons.

Though organized veterinary medicine in America is still a youthful institution, our qualified graduates have for some time realized the necessity of obtaining some protective legislation, which their status might be recognized and established, and efforts have been made in several States at various times, to obtain from their respective Legislatures the enactment of suitable laws on

ject. The Legislature of New York, it is known, has been first to move effectively, and the law which was passed last spring has dealt to quackery in the Excelsior State the first blow which dooms it to extinction.

The *Recueil de Medecine Vétérinaire* brings us the news that France is again attempting to effect the reform which its friends have so often failed to obtain. A bill has been introduced in the Assembly by which, if it is enacted, veterinary medicine will be in that country, as in our own State, a well regulated interest, with duly protected graduates. Amongst the various sections of the bill the first two define the results to be obtained. They read as follows:

“Art. 1.—In a year from the passage of this act, the practice of veterinary medicine will not be allowed except by those who shall hold a diploma of veterinary surgeon granted by one of the National Veterinary Schools of France.

“Art. 2.—All those that without diplomas have treated animals for five years at least, and by this fact are registered as such, shall, within a year from the passage of the present act, give evidence of their professional knowledge before a committee appointed by the Minister of Agriculture, which shall be composed of at least two veterinarians and one agriculturist, and . . . those who shall have passed satisfactory examinations shall be allowed to continue to practice in their respective localities.”

When this law is passed our French confreres will have improved upon our work, though the result will still be the same. Our past experience excites our fear lest the second article should meet with much objection, and it would not surprise us to learn that, as with us, the examination clause had caused the defeat of the bill.

Art. 3 of the bill treats of a subject to which our American graduates will not be indifferent. It says: “Veterinarians holding a foreign diploma shall not be allowed to practice in France without the authorization of the Minister of Agriculture. This shall be granted; 1st, on the request of the applicant and the presentation of his diploma; 2d This diploma

“must be recognized as possessing the same guarantees as those
 “granted by the French schools; 3d Reciprocity of recognition
 “must exist, either with the Government from which the diploma
 “is granted, or with the nationality of the applicant.”

This last clause of Article 3 warns the foreign schools that the education they furnish to their graduates must be good and thorough; and it may also be recognized as betraying the influence of the impression heretofore made by certain spurious diploma mills, especially those of America; a sad reminiscence of some of the work done by the McClure institutions and their like, some years ago.

POLYURIA AS A MEANS OF DIAGNOSIS OF TUBERCULOSIS IN THE HORSE.—Though for a long time the name of tubercle has been applied to certain lesions of the respiratory or digestive apparatus of solipeds, it is but recently that it has been established that true tuberculosis may exist in the horse also. The bacillus of Koch having been discovered by Trasbot and Nocard during their post mortem investigations, the demonstration became complete of the possibility of *natural* tuberculosis in animals of this species. The discovery of this bacillus in these lesions furnished Professor Nocard with an opportunity to change his mind in respect to the nature of an affection which he had described some years previously, and which he attributed to disease of the lymphatic structures, which he had called pulmonary lymphadenitis in his pamphlet on leucocythemia. Resuming the study of this disease, though no longer under the name he had before given it, but under its true and the more proper denomination of tuberculosis, he noticed that six out of eight of the animals which he had under observation were affected with a certain peculiar symptom which he thinks is of great importance when one considers that very often great difficulty is met in discovering the lesion which gives rise, during life, to the serious manifestations that are presented by the patient. “This symptom is an abundant polyuria, which lasts for several weeks, and which no doubt plays an important part in the rapid loss of condition of the patient. The quantity of urine passed is sometimes double, treble, or even quadruple the normal amount. The proportion

a contained in it is considerably increased, and uric acid, which is generally lacking in the urine of herbivorous animals, exists in quite large proportions; while hippuric acid, ordinarily abundant, is reduced to an insignificant quantity, or quite disappears. This, Professor Nocard considers, is of great importance in diagnosis, and he ventures so far as to say that there need be no hesitation in making one of tuberculous phthisis, when with the *polyuria* there is also a total absence of pulmonary, cardiac, intestinal or renal disturbance sufficient to explain the distressing condition of the patient.

Since the publication of this statement by Professor Nocard, other veterinarians have printed records of cases where this symptom, carefully observed, had been sufficient to determine a diagnosis which was confirmed by the post mortem.

NATIONAL VETERINARY ASSOCIATION OF GREAT BRITAIN.—A few years ago a National Veterinary Association was organized in Great Britain, uniting under one head and in a single body the veterinarians of England, Scotland and Ireland, and forming a sort of congress, similar to our United States Veterinary Medical Association. We have been kindly furnished with concise reports of the fourth annual meeting of this body, which was held on the 22d and 23d of July, and we reprint them in this issue, with the hope that some good may result to our readers from a study of the proceedings. The address, which was delivered by Professor Walley, was followed by the reading of scientific papers. Mr. J. S. Hurndall, of Liverpool, considered the question, "Can experimental pathogenesis be rendered useful in elucidating a definite system of veterinary practice?" The essay of Professor McFaydeau, of the Royal Veterinary College, was on "The micro-parasites of the domestic animals," which excited a great deal of personal feeling. On the second day Mr. W. Lanting, of London, read an essay on "Lameness in horses," and Professor W. O. Williams, of Edinburgh, with Mr. R. Roberts, of Kendal, one on "Anæsthetics and anæsthesia in relation to veterinary practice." Some minor subjects, of less interest, closed this fourth meeting, which was followed by a pleasant social reception in the City Chambers.

HOG CHOLERA continues to prevail more or less extensively throughout the country, Nebraska especially losing largely by yearly. The Regents of the University of Nebraska have appointed Dr. Billings to investigate the disease in that State, and a series of questions has been prepared to be submitted to the farmers for information on the subject. Why not appeal to veterinarians at large for the expression of their views? We give the questions below, to which answers can and ought to be given not only from Nebraska, but from every portion of the country where the disease prevails and has been observed by veterinary surgeons:

1. How many hogs did you raise in 1885?
2. Did you have hog cholera in 1885?
3. How many hogs did you lose from it in 1885?
4. What was their market value at the time of death?
5. What breed were the diseased hogs?
6. Have you noticed that any one breed of hogs was more likely to acquire hog cholera than another, and which?
7. Are rough, native hogs more susceptible to hog cholera than the improved breeds?
8. At what season of the year was your loss the greatest?
9. Please state your opinion as to the effect of hot and cold, wet and dry seasons on outbreaks of hog cholera, especially with regard to severity?
10. Have you noticed that high or low breeds have any effect upon outbreaks of hog cholera—that is, does it appear earlier in the season or with more severity in hogs kept on high, dry land than on the low and wet?
11. Have you any ideas as to how the disease got into your herd?
12. Do you think that there is but one disease known as hog cholera, or several; if the last, please give your practical reason for thinking so?
13. Did you have hog cholera in your herd in 1884?
14. Were your hogs kept in the same place in 1885 as those of 1884, and did they have disease in 1885?

15. Have you observed that sex or age exerted any influence for or against hog cholera?

16. Do you know anything surely as to whether hogs that we had cholera will again have it the next year if again in the fall, if allowed to live?

ANTHRAX.—INOCULATION THE PROPHYLACTIC TREATMENT.—The veterinary (?) columns of our agricultural papers have been largely occupied of late with the subject of anthrax, and many urgent inquiries and anxious suggestions have been propounded touching the best course to be adopted for the protection and prevention of such cattle as may be threatened or have been attacked by any of the forms of that disease, and reports are published, more or less reliable, of its appearance more or less extensively in several States of the Union. These facts should excite surprise, for the state of things now existing is but a repetition of the experience of other years at seasons corresponding with the present.

There is, however, much that is surprising in the recommendations and suggestions of many of the writers who have dealt with the subject in the agricultural papers—which, nevertheless, do not intend specifically to criticize.

We do not wish to disparage the wisdom or to ignore the benefits that may be derived from some of the modes of treatment that are thus recommended, but in admitting that they have in some instances been followed by success, there is no doubt that in the majority of cases they have not only failed to cure, but have never succeeded in preventing the extension of the disease. It is an acknowledged fact, and has been for years established beyond doubt, that there is but one right way to deal with the various forms of anthrax, that there is but one means of checking its extension, and that is by *inoculation*. We have frequently called attention of our readers to the value of the prophylactic treatment, but our warnings have been ignored or unheeded. Among the few who have put this sovereign measure successfully to the test, only Dr. Faust, of Poughkeepsie, so far has kindly furnished us with his report of the results he has obtained. Our limitations of space will not allow us to publish this month his report of his

experiments—the first, we believe, made on this continent,—but we may say that here, as well as abroad, the result has been a complete success. Animals inoculated by Chauveau's vaccine have all been protected from the disease, and it has been checked after having proved fatal to a number of animals. We shall publish the report of Dr. Faust as soon as possible. His example ought to be followed.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.—The next annual meeting of this large body of veterinarians is to take place, as we are informed by notification from the Secretary published in our present issue, on the third Tuesday of this month.

The Comitia Minora will meet at 10 A. M., and the general meeting at 11 o'clock. We publish to-day a list of the officers of the Association for the current year.

The veterinary profession has assumed so important a position within the last few years in this country, that no doubt the gathering of such a large number of practitioners can hardly occur without greatly benefitting the community as well as affording pleasure and interest to the members. We hope to have a good report to print in our next issue.

PRIZES OF THE U. S. V. M. ASSOCIATION AND OF THE REVIEW.—We have at a late hour received a second paper for competition for the prizes offered by the United States Veterinary Medical Association and the AMERICAN VETERINARY REVIEW. At its next meeting the value of the two papers will be considered and decided, not only by the Committee on Prizes, but by the entire Association. The fact that the paper by "Incognitus" published in our July number, is on the same subject with that of "Lucidus Ordo," will give additional interest and pertinence to the comparison and competition of the work of the two contestants. This inauguration of a series of friendly literary tournaments gives good promise for the future of ambitious endeavor and persevering study by the younger members of our profession.

HOG CHOLERA (?) prevails as usual in many States.

ORIGINAL ARTICLES.

PARTURIENT APOPLEXY.

A paper on the essential nature of Parturient Apoplexy in the cow, respectfully submitted in competition for the AMERICAN VETERINARY REVIEW Prize.

BY LUCIDUS ORDO.

The necessities of successful therapeutics in veterinary medicine demand a more accurate knowledge than we have hitherto possessed regarding the etiological and pathological relations of disease. The revelations of post-mortem investigations throw, perhaps, the only direct light upon the pathogenesis of disease. All science is essentially empirical. In animals, as in man, the processes of life and death involve the same factors. The acceptance of any belief which does not embrace this doctrine so far disqualifies the veterinarian for skillful and scientific practice. Seen in its integrity, comprehended in its fullness, nature is a unit. What we see are only the infinite phases of expression which she embodies. Emerson has well said "All science has one aim, namely, to find a theory of nature. A true theory will be its own evidence. Its test is that it will explain all phenomena." Let us approach the discussion of our subject with something of the spirit of the Concord philosopher. Let us see if the present state of science does not offer a comprehensive explanation of that morbid state which is designated in the cow "parturient apoplexy." There has been much wild speculation during the past half century regarding the essential nature of this disorder. As might be supposed the tendency has been in the direction of accepting the hyperæmic or congestive theory as sufficient to explain the phenomena of the malady. This hypothesis strikes the unprejudiced mind with great favor. But like many other theories it will not explain the facts as they present themselves for interpretation.

While, unquestionably, congestion sometimes does take place and even hemorrhage into the cerebrum, it still is not the factor which makes up the pathogenic entity of parturient apoplexy.

Nor does the theory first announced by Lever (in relation to puerperal eclampsia in women) account either for the phenomenon of this disease in the human being or in the cow. The evidence is as strong against this hypothesis as in its favor. Statistics show that a very little more than 50 per cent. of the human beings affected with albuminuria during pregnancy become the victims of parturient eclampsia. The relation then between the eclampsia and the albuminuria, to say the least, is very uncertain and the phenomena of albuminous urine are absent in perhaps most cases of eclampsia. We can find in the hydraemic condition of the blood of the pregnant state a predisposing factor to eclampsia, but unless this is very intense it is not in itself sufficient to provoke the disease. The theory of Traube and Rosenstein accounts for the phenomena of parturient apoplexy in this way and it has the support of much experimental investigation. MacDonald advances the theory that the phenomena of parturient eclampsia arise from cerebro-spinal anaemia induced by irritation of the vaso-motor center from the retention of excrementitious matter in the blood. This theory, like the former one, has much to commend it, but it also fails to explain everything. I apprehend that to comprehend fully the physiological and pathological processes which are involved in the production of the disease we must disentangle the subject from the many perplexing elements which have been forced into it, and perhaps we may do good service in declaring that the old notion regarding congestion of the brain being the essential underlying factor in the causation of the malady has been exploded in the more recent revelations of science. The keynote to puerperal apoplexy in the cow, as in the human subject, is found in the peculiar excitability of the nervous system of pregnancy. *Puerperal apoplexy* is a bad name. It too readily conveys the conception of congestion or actual effusion or real hemorrhage, pathological states which are not associated with the puerperal eclamptic condition except in very rare cases. How do we account for the condition which characterizes typhus and typhoid? Not upon any theory of congestion. What was the *simple apoplexy* of earlier writers and why did they denominate it simple or nervous apoplexy? F

the reason that post-mortem examinations indicated no adequate cause of death. McDonald has published the results of several post-mortems made in the case of women who died in puerperal eclampsia, and found the nerve centers in a condition of extreme anæmia, while the meninges were somewhat congested. I have myself made several autopsies upon cows that died with the same history, and in every example the brain was found bloodless. I may remark at this point that in what is usually called impaction of the stomach, where death results, post-mortem shows a similar appearance of the brain substance. I have verified this in a number of instances and regard the essential pathological condition to be one of anæmia. Linking together the theories of Traube and Rosenstein and McDonald and Tyler Smith, we may evolve from the whole an hypothesis founded in science and competent to explain every phenomena of the disorder. By the phrase parturient apoplexy I wish to express the conception of a morbid state of the cerebro-spinal centers induced by primary irritation of the reproductive system. The same phenomena may ensue upon irritation originating in the gastro-intestinal and urinary systems, but for the purposes of this paper it will suffice to discuss only (except in an incidental way) the genito-urinary system as starting points for this affection. In recent times the studies of the pathology of the ganglionic nervous system have thrown much light upon these complex questions of parturient pathology. The phenomena of motor disturbance and sense aberration arise both from centric and eccentric causes. Conceding this proposition, which is attested by ample clinical experience, the question arises, what is the *modus operandi* of these phenomena? We are much aided in this explanation by the written or unwritten pathology of the past. Empiricism and traditions afford the only foundation stones to build upon. Writers of veterinary pathology have contributed but little to the elucidation of this subject. Medical text-books and journals abound in statements which are unwarranted by the researches of science, nor supported by the force of analogy. The conflicting opinions still entertained regarding its essential nature evidence the fact that it requires the aid of additional study thrown upon it to bring it within the

range of intelligible comprehension. The names it has received are misleading and deceptive and inevitably defeat the ends of scientific veterinary medicine. Most writers upon the subject of parturient apoplexy ascribe it to plethora and indigestion from over-stimulation and want of exercise, with subsequent derangement of the sympathetic nervous system, followed by congestion of the brain and apoplexy. Cerebral congestion is an heirloom of a departed pathology. Cases in which the pronounced symptoms of apoplexy in the parturient cow can be ascribed to active congestion are few. It has been truthfully said that congestion of the brain as well as impaction of the stomach is a ready diagnostic refuge, seductive in its simplicity, and pleasing in its preciseness, easily affirmed, and not easily disproved, (Gowers). The discovery of the vaso-motor system of nerves, showing that the circulation, secretions and general nutrition of the tissue are under the control of special nerves—(vaso-constrictors and vaso-dilators and trophic nerves)—enables us to understand something of the loss of function that results from what we call irritation.

Claude Bernard has shown that the loss of consciousness due to anæsthesia from chloroform is absolutely analagous to what takes place when the sensory nerves succumb to abstraction of blood, or that troubles of sensibility manifest themselves at the periphery. Excessive and prolonged irritation depresses the vaso-motor centers and relaxes the vessels (Bartholow). When this occurs there is stagnation of blood in the abdominal vessels. When this paralytic relaxation passes certain limits, the abdominal vessels are capable of holding the whole of the blood in motion. Thus is explained the paleness of the eyes and visible mucous membranes, the coldness of the head, horns and extremities, the unequal distribution of the surplus heat of the trunk, the subnormal temperature, the coma and paralysis. When the lesions are of a destructive kind, depression of the trophic centers as well as the vaso-motor centers, ensues. When the brain is suddenly deprived of blood, one effect is often to cause convulsions. Thus the first result of failing functions may be the liberation of energy. These considerations enable us to under-

and something of the secondary effects of irritation. It may only cause over-activity of nerve-elements; it may lessen their activity and even arrest it altogether. The same stimulus in different degrees will either arrest or produce reflex action (Gower). If irritation can produce the symptoms of congestion at one time and of anæmia at another, it remains to be explained how this is done. It will assist us in our consideration of the morbid conditions of the cerebro-spinal centers that follow reflex stimulations by keeping in mind that the circulation is directly under the control of the nervous system, and of the organs contained in the abdominal cavity. We should not, in this connection, lose sight of the amount of stimulus necessary. A moderate degree of irritability of the end organs of the sensory nerves contained in the mucous-membrane—not too violent and long-continued, stimulates the vaso-motor centers in the medulla, causing general contraction in the arterioles. When this irritation reaches a sufficient degree of intensity, the walls of the abdomen and of the hollow organs contained in the abdominal cavity enter also into contraction, followed by increased blood pressure in the vessels least provided with muscular fibres. The blood vessels of the brain, from their anatomical peculiarity, are an exception to this law. Thus is explained the elevation of the temperature of the mouth, head and horns, the hurried respiration, the accelerated pulse, the early loss of the power of vision, and the spasmodic contraction of the muscles; thus may be developed delirium and convulsions, and loss of voluntary power. When we take into consideration the clinical history of parturient apoplexy, and also its post mortem appearances, the conclusion is irresistible that it cannot be due to congestion. Ante-mortem congestion sufficient to give rise to symptoms similar to or identical with those of parturient apoplexy can be demonstrated post-mortem.

If there is no evidence after death of hyperamia having existed during life, does not the hyperamic theory fall for want of proof? The symptomatology of congestion, at best, is vague, and will not satisfy the scientific enquirer to be answered that these are the phenomena of congestion.

Perhaps in the present state of knowledge it is not always easy to differentiate this condition from the opposite one of anæmia, but when the keen edge of the dissecting knife discloses the actual condition, we are forced into conviction, and must admit that where all the evidence of anæmia are present, the condition must exist. This is arriving at a conclusion by that very rigid process of reasoning known as a deduction by exclusion. That congestion is the undulying factor in parturient apoplexy is a pure fancy, which derives its best life from the traditional opinions that die with a great struggle always. The study of the functions of the nervous system can offer the only rational and scientific solution to the various problems which grow out of these disorders. The question of the intimate nature of parturient apoplexy is not so much a question of quantity in blood, as it is a question of innutrition and irritation. With enlarged views touching these elements of the disease our conceptions of rational therapeutics will be broadened greatly.

AMERICAN VETERINARY COLLEGE.

HOSPITAL RECORDS.

NEW COMPLICATIONS OF CASTRATION—SEQUELÆ IN OPERATION ON A MONORCHID.

BY ROBT. WEIR, D.V.S., House Surgeon.

I say complications of castration, for it is not uncommon to hear persons who have not the least idea of the structure of the parts upon which they operate, boast of their ability to perform this simple operation. The following case has been a victim to such a one:

The owner of a bay stallion, two years of age, wished to have him castrated; the services of a gelder were obtained and the operation began. The right testicle only was to be found in the scrotum; this was removed, and then began the dead search for the left one. An incision of several inches was made in the perineal region about eight or nine inches below the anus; in so doing, the penis was incised, the urethra perforated and divided

it across, and the operation given up with the looked-for testicle still unfound. Nothing more was done until the expiration of two weeks, when Mr. Deronde, a student of veterinary medicine, was called to treat the case. He found that micturition was performed with difficulty, some urine making its exit through the end of the penis, while the greater part came out through the wound already made at the perineum. An attempt was made to pass a catheter, but when it had passed about nine inches into the penis it could be forced no farther.

The owner now decided to have the horse sent to the hospital for treatment, if any was possible. When admitted here the anal wound had nearly closed, urination was nearly impossible, and urine escaped in only a very small stream that was said to have been constantly decreasing in size, and, when the urine passed, much pain was existing, shown by kicking, switching the tail, etc. Upon the preceding symptoms and history a diagnosis of stricture of the urethra was made. As there was yet an escape of a small quantity of urine from the end of the penis, it was thought possible that the stricture might be dilated by means of bougies until regaining its former size, but, notwithstanding the most careful and persistent efforts, nothing would pass the stricture. Had this closing of the urethra been in the free position of the penis it might have been removed by amputation of that part, but this neither could be done, for the abnormal stricture was located back of the reflection of the prepuce over the penis.

What was to be done? It was thought that possibly the stricture might be entered and dilated from behind, and to that effect urethrotomy was performed in the usual place, in the same manner, but with much difficulty in finding the urethra, though the use of cocaine the operation was rendered entirely painless and the animal stood very quiet all the time. But no more success could be gained by entering the urethra in that way, and no information obtained except the fact that the stricture must be measured about one inch in thickness.

It was then thought to attempt to make a permanent artificial opening at the ischial arch, so that the colt might be allowed to urinate as mares do. To that effect the incision which had

been made to perform urethrotomy was enlarged and lengthened to be about four inches long, the mucous membrane of the urethra stitched to the skin on the edges of the wound by ten or twelve silk and catgut carbolized sutures. For a few days this seemed to be a success; the colt when urinating stretched himself like mares do, and the urine was thrown out in a good large stream. Toward the tenth day the sutures, however, gave way, the wound began to granulate and close by degrees. The last thing which was attempted was to deal directly with the stricture. To effect that a metallic catheter was introduced on one of the entrances of the urethra, while by the other was pushed the canula of a straight trocar. Both instruments were by external manipulation brought in opposition as near as possible and then the trocar was pushed into the canula cautiously, then through the cicatricial tissue of the urethra, trying to reach the end of the metallic catheter which was in the other portion of the urinary canal. Several attempts were made but failed, and as false passage would necessarily follow the failures, further treatment was abandoned and the owner decided to have him destroyed.

Previous to doing this the missing testicle was looked for by rectal examination. It was easily felt just at the inguinal ring and by slight manipulations pushed through the inguinal canal when it arrived into the scrotal region. At the post mortem two abscesses were found on each side of the median line in the inguinal region in which the pus had a slight urinary smell. The scrotal region was the seat of an extensive yellowish serous infiltration. The penis being removed and put aside for dissection the urethra was found cut right across, cicatricial tissue had formed which measured nearly one inch in thickness, and both cut ends of the canal were superposed, so to speak, in such a manner that what little track existed to allow the urine to escape described an S course through the stricture and between the upper and lower portions of the yet open urethra.

ANTHRAX.—It is said that murrain prevails in portions of Kansas and the Indian Territory, and many cattle have died from it.

LARGE FUNGOID GROWTH OF THE METATARSAL REGION OF SEVERAL MONTHS STANDING—FAILURE OF AMPUTATION—DISSECTION AND CAUTERIZATION—CONTROL OBTAINED BY PRESSURE WITH COMPRESSED SPONGES—ENTIRE RECOVERY.

BY J. WALRATH, D.V.S., House Surgeon.

A bay filly three years of age, used as a running animal, and bred highly on account of the honors achieved on the racing track, had the misfortune to receive a cut from the heel of the shoe on the flexor tendons of the off hind leg, about midway between the tarsus and fetlock. Not much attention was given to the wound at the time, until after several days, when the leg began to swell and was becoming very sore to the touch. A veterinarian was called, prescribed poultices to the part, which were kept up for a considerable length of time; granulations in the meantime began to spring up, causing the wound to bulge out very much. The next step was to remove these with the knife, caustics, etc., but after treating the case for sometime without any improvement, another practitioner was engaged, who, meeting with no better result, was supplanted by a third, who, after attempting to dissect the growth out, and cut it from under the skin, found the granulations always returning and protruding, and then in turn referred the case up.

Such was the history given on her admission to the hospital, which took place on the 22d of April. The leg at this time was edematous in shape, being considerably swollen, especially in its distal portion. The wound was extremely vascular, covered by black scabs and was discharging freely, being about three inches across its surface, and standing out nearly two inches, being situated slightly to the inside of the median line of the leg. The animal was very lame when moved, kept the leg constantly raised from the floor, as even the slightest amount of weight caused great pain to the affected member. For the first two days the wound was poulticed with flaxseed between two pieces of fine muslin to remove the scabs, and when these had fallen off the wound was cauterized with nitrate of silver and dressed antiseptically with a solution of carbolic acid. No improvement being noticed, this form of dressing was discontinued, and simple cauterization

around the edges with nitrate of silver, and of the granulation with a saturated solution of chlo. zinc, with an oakum dressing placed over this, and held *firmly* in place by a ticking bandage. This was kept up for some time without any diminution in size; in fact, the fungus growth was spreading, and in some respects now resembling a mushroom.

On the first of May an elastic ligature was applied tightly around the now almost strangulated granulations. After three days the ligature had cut through all but a small pedicle, which was amputated with a knife, it being still dressed the same as before the ligation, with the exception that iodoform was powdered over the surface of the wound. The granulations in a short time commencing again to bulge, a second elastic ligature was placed around them, which amputated them so closely as to leave the edge of the ulcer lower than the surrounding skin and causing some hemorrhage. A small surgical sponge was now placed in the sore over which a pad of oakum was laid and the whole bandaged with linen and woolen, the sponge being replaced by a new one at every dressing, which took place every other day. But little improvement was noticed in the size of the wound, it remaining about the same. An ulcer now broke out on the anterior part of the leg over the bone, produced by the continued pressure of the bandages. To combat this now ugly complication a piece of "Russian felt" was moulded to fit the metatarsus on all sides except the back, a window being left in that part corresponding to the ulcer. The inside of this splint being padded with oakum, firm pressure was once more brought to bear over the growth which was coated around the edges with collodion, cauterized with chlo. zinc, and covered by a *compressed sponge* the exact size of the ulcer, and kept in place by firm bandaging.

Under this treatment improvement began to take place and cicatricial tissue to form on the upper border. Great care had to be exercised in removing the sponges to prevent hemorrhage which took place from the slightest cause; even raising the foot was sufficient to cause profuse bleeding. This form of dressing was continued for three weeks, at the end of which time the collodion was discontinued, its efficacy being no longer noticeable.

On the 3d of July, through atmospheric change, she was taken with pneumonia of the left lung; her temperature rapidly went up to 105° , pulse 60, and respiration 36. Her appetite, which had been good since she entered, now became very poor, refusing everything but a little hay. She was immediately put under quinine, carb. amm. and alcoholic stimulants. Suffering considerably from thirst, she was allowed a plentiful supply of milk and eggs, together with oatmeal gruel, which she took with pleasing relish. After some time her temperature gradually came down; stimulants and tonics were now prescribed in the form of nux vomica, gentian and capsicum, which aided in bringing about a complete recovery. During the nearly two weeks of sickness, the dressings on the leg were allowed to go a longer time than usual without removal; sometimes remaining on as long as three and four days. Still the wound on the flexor tendon was gradually decreasing in size, the fungoid granulations which had given so much trouble being now fully under control. The edges were nicely cicatrized and the swelling became less every day. The wound on the front of the leg occasioned considerable trouble from its excessive sensibility, but became rapidly better upon the application of chlo. zinc and by loosening the pressure of the bandage, which were put on less tight as the swelling went down.

At length on the 2d of August (the filly had now been here about sixteen weeks) the wound looked so healthy that the sponge was discontinued and a small pad of oakum substituted in its place. During the time that has elapsed since this change a decided improvement is noticed at each dressing. The surfaces of both wounds are now completely cicatrized. The lameness has entirely disappeared, and the swelling almost all gone.

PROBABLY GLANDERS.—It is reported that a fatal disease has broken out in Harrison county, Ind., among the horses. The symptoms are sore neck or throat, and a running at the nose.

TEXAS FEVER IN ILLINOIS.—It is reported that a disease, believed to be Texas fever, has broken out among cattle near Canton, in this State, and several have died from the effects of it.

EXTRACTS FROM FOREIGN VETERINARY PAPERS.

A NEEDLE IMPLANTED IN THE TONGUE.

BY VAN HUFFELEN.

A cow, whose appetite was poor and which presented a swelling of the inter-maxillary space, was treated by an empiric who after a careless examination of the mouth had failed to discover any cause for the trouble, and prescribed for her astringent gargles, with poultices of clay and vinegar over the swelling.

No improvement being observed, the author was called, who in carefully exploring the mouth, found a needle implanted in the base of the tongue. Rapid recovery followed the extraction of the needle. This was the fifth time the author had met with a similar case.—*Bullet. Comité Consult. Belg.*

PERFORATION OF THE ŒSOPHAGUS IN THE THORACIC PORTION.

BY DELREE.

The author was called to attend a cow suffering with tympanitis, and asked to perform the operation of œsophageal catheterism, which had already been tried by the owner. He observed that the respiration was painful, and that the animal refused all food. Thorough examination revealed the fact that both pleural sacs were filled with serosity and that the left lung was the seat of extensive disease. The jugular vein was largely distended; the pulse was strong and quick; respiration was accelerated and painful, and locomotion weak and staggering. In this condition of things the owner was advised to have the animal destroyed. At the post-mortem, a laceration was found in the œsophagus, at the entrance of the thorax, about five centimeters long (2 inches and a half), due to the passage of the pump-bang.—*Ibid.*

PROLAPSUS OF THE RECTUM.

By BRIL.

A hunting dog, seven months old, had an extensive prolapse of the rectum. Having reduced it, an attempt was made to keep it in place by means of a cord placed around the anus like the

ing of a purse ; but finding it returning, amputation was decided upon as the only means of removal. To effect this, interrupted sutures were placed around the intestines, at about one centimeter (five inches) from the anus, in such a manner that the ends of this organ could be brought in contact with the healthy intestines after the removal of the protruding portion. This being amputated, the parts were returned to their place without difficulty. A few days of low diet and laxative feeding were followed by rapid recovery.—*Ibid.*

INTESTINAL OBSTRUCTION BY STERCORAL MASSES.

By Mr. GODFRYN.

A mare, four years old, was in danger of dying from the intense suffering of severe colics, the result of intestinal obstruction, though nearly all indicated treatment had failed, such as tartar emetic, oily purgatives, drastics, etc. The tympanitis continuing to increase, and suffocation threatening, the puncture of the cœcum was performed and followed by the evacuation of abundant intestinal gases, which somewhat relieved her. Thirty grammes (one ounce) of aloes dissolved in alcohol was then administered through the canula of the trocar, and followed by digital injections ; and an hour later she was taken with violent expulsive efforts. These were succeeded by the evacuation of three large stercoral masses, one of which measured 10 centimeters in length and 28 in circumference. These were followed by active movements of the bowels, and the result was complete recovery in a few hours.—*Ibid.*

RUPTURE OF THE SPLEEN—ABDOMINAL HEMORRHAGE.

By Mr. CONARD.

A mare had been suffering with colics for nearly twenty-four hours when the author was called to see her. At his first visit he found her lying down on the right side, with an extremely rapid, soft and intermittent pulse, the mucous membranes very pale, and the respiration much accelerated. The animal was making frequent and repeated expulsive efforts. A diagnosis of internal abdominal hemorrhage was made, and a fatal prognosis

given; death took place shortly after. At the post mortem the abdominal cavity was found full of blood. All the abdominal organs were healthy except the spleen, which presented on its internal face a large laceration. The serous and fibrous coats were irregularly torn in their length to an extent of about 15 centimeters (over 7 inches). On the left hypochondriac region there was a slight tumefaction, with bloody extravasations between the peritoneum and the muscular structure. The animal having been severely kicked by another horse on the previous day and taken ill at that time, it is evident that this was the cause of the laceration of the spleen and the consequent abdominal hemorrhage.—*Ibid.*

DENTAL NEURALGIA.

By Mr. MACORPS.

An old horse had for about a week refused his food, carrying his head down and resting the occiput upwards against the lower border of the manger, as if trying to raise it. The patient was dull and listless, the mucous membranes pale, the coat staring, the flanks retracted. At times the muscles of the neck were the seat of slight trembling, and he had convulsive movements as if in great pain.

Careful inquiry into the history of the trouble failing to throw any light upon the case, or to aid in the diagnosis, a minute examination of the mouth was made, when a black foreign body was found projecting between the first two molars of the lower jaw. This was knocked off with a chisel and hammer, and followed within an hour by complete recovery.—*Ibid.*

QUADRIGIMELLAR GESTATION IN A COW.

By M. ROSAM.

The author was consulted upon the condition of a cow whose appetite was failing and who thrived but poorly. He advised tonic and stimulant treatment under which she did well, and in proper season, was sent to pasture. Some six months later, M. R. was again consulted, as the animal, though having a great appetite and eating all that was given her, was still losing flesh.

idly. Better and more abundant feeding was prescribed, but the animal lost flesh, while her abdomen was increasing considerably in size. An empiric amputated her tail, saying she was suffering with worms in that member. Still she failed to improve, and at the post-mortem the cow was found pregnant with four perfectly developed calves in her uterus, weighing altogether 94 kilogrammes, (about 188 pounds). All these calves were males.—*Ibid.*

EPITHELIOMA OF THE CLITORIS IN THE COW.

BY M. CONTAMINE.

This case is recorded principally on account of the rarity of occurrence. The animal was a six years old cow, and had some time presented a growth at the lower end of the vulva, which had caused much suffering, as it continued to enlarge. This growth was painful; about the size of a pigeon's egg; elongated; and divided into small irregular lobules of a cauliflower form. As it was already undergoing softening on one side, and on account of its size and sensibility, its amputation was immediately decided upon. This was done with an elastic ligature, which was placed at the base of the tumor, and tightened as much as it would bear. This was accompanied by great pain, manifested by the restless movements of the animal, but was relieved by lotions of phenic acid and tincture of arnica. A few days afterwards the tumor, being strangulated by the ligature, was twisted off, and the wound which resulted was cauterized with the actual cautery. A short time afterwards the cow delivered of a healthy calf.—*Ibid.*

CARILAGINOUS QUITTOR.

BY BRIL.

A black horse had been for more than a month suffering with carilaginous quittor of the off hind leg. He presented a fistula in the inside cartilage, running through that structure, and a cicatrix indicating the presence of another tract, all healing. There was also a second fistula, more superficial, and corresponding

with the first. The animal was quite lame. Having before obtained good results with the injection of permanganate of potash, the author decided to try it in this case. As it requires some care in using it, but three daily injections were carefully made for three days. After that time the treatment was changed and injections of Villate's solution substituted, to be but used but once a day. In three days the recovery was complete.—*Ibid.*

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SANITARY LEGISLATION.

RULES AND REGULATIONS FOR THE SUPPRESSION OF CONTAGIOUS PLEURO-PNEUMONIA.

Recent acts of Congress make it the duty of the Commissioner of Agriculture to prepare rules and regulations for the suppression and extirpation of the contagious pleuro-pneumonia

of cattle, and authorize expenditures for investigation, disinfection, quarantine, and for the purchase of diseased animals for slaughter. The following are the sections bearing upon this subject.

SECTION 3.—That it shall be the duty of the Commissioner of Agriculture to prepare such rules and regulations as he may deem necessary for the speedy and effectual suppression and extirpation of said diseases, and to certify such rules and regulations to the executive authority of each State and Territory, and invite said authorities to co-operate in the execution and enforcement of this act. Whenever the plans and methods of the Commissioner of Agriculture shall be accepted by any State or Territory in which pleuro-pneumonia or other contagious, infectious, or communicable disease is declared to exist, or such State or Territory shall have adopted plans and methods for the suppression and extirpation of said diseases, and such plans and methods shall be accepted by the Commissioner of Agriculture, and whenever the Governor of a State or other properly constituted authorities signify their readiness to co-operate for the extinction of any contagious, infectious, or communicable disease, in conformity with the provisions of this act, the Commissioner of Agriculture is hereby authorized to expend so much of the money appropriated by this act as may be necessary in such investigations and in such disinfection and quarantine measures as may be necessary to prevent the spread of the disease from one State or Territory into another. (Approved May 29, 1884).

BUREAU OF ANIMAL INDUSTRY.

For carrying out the provisions of the act of May 29, 1884, establishing the Bureau of Animal Industry, \$100,000; and the Commissioner of Agriculture is hereby authorized to use any part of this sum he may deem necessary or expedient, and in such manner as he may think best, to prevent the spread of pleuro-pneumonia, and for this purpose to employ as many persons as he may deem necessary, and to expend any part of this sum in the purchase and destruction of diseased animals whenever in his judgment it is essential to prevent the spread of pleuro-pneumonia from one State into another. (Approved June 30, 1886).

in accordance with these laws I hereby certify the following regulations and regulations for co-operation between the Department of Agriculture and the authorities of the several States and Territories, which I deem necessary to insure results commensurate with the money expended :

INSPECTION.

The necessary inspectors will be furnished by the Bureau of Animal Industry of the Department of Agriculture.

The properly constituted inspectors of the Bureau of Animal Industry, which are assigned to the respective States, are to be authorized by proper State authorities to make inspections of herds under the laws of the State; they are to receive such protection and assistance as would be given to State officers engaged in similar work, and shall be permitted to examine quarantined herds whenever so directed by the Commissioner of Agriculture or the chief of the Bureau of Animal Industry.

All reports of inspections will be made to the Bureau of Animal Industry, and a copy of these will then be made and forwarded to the proper State authorities; when, however, any inspector discovers a herd infected with contagious pleuro-pneumonia he will at once report the same to the proper State authority as well as to the Bureau of Animal Industry.

The inspectors, while always subject to orders from the Department of Agriculture, will cordially co-operate with the State authorities and will follow instructions received from them.

QUARANTINE.

When contagious pleuro-pneumonia is discovered in any herd the owner or person in charge is to be at once notified by the inspector, and the quarantine regulations of the State in which the herd is located are to be enforced from that time. Affected animals will be isolated, when possible, from the remainder of the herd until they can be properly appraised and treated.

To insure a perfect and satisfactory quarantine, a chain fastened with a numbered lock will be placed around the horns, or around the neck of hornless animals, and a record will be

kept showing the number of the lock placed upon each animal in the herd.

7. The locks and chains will be furnished by the Department of Agriculture, but they will become the property of the State in which they are used, in order that any one tampering with them can be proceeded against legally for injuring or embezzling the property of the State.

8. Quarantine restrictions once imposed are not to be removed by the State authorities without the consent of the proper officers of the Department of Agriculture.

9. The period of quarantine will be at least ninety days, dating from the removal of the last diseased animal from the herd. During this period no animal will be allowed to enter the herd or to leave it, and all animals in the herd will be carefully isolated from other cattle.

When possible, all infected herds are to be held in quarantine and not allowed to leave the infected premises except for slaughter. In this case fresh animals may be added to the herd at the owner's risk, but are to be considered as infected animals and subjected to the same quarantine regulations as the other members of the herd.

SLAUGHTER AND COMPENSATION.

10. All animals affected with contagious pleuro-pneumonia are to be slaughtered as soon after their discovery as the necessary arrangements can be made.

11. When diseased animals are reported to the State authorities, they shall promptly take such steps as they desire to confirm the diagnosis. The animals found diseased are then to be appraised according to the provisions of the State law, and the proper officers of the Bureau of Animal Industry (who will be designated by the Commissioner of Agriculture) notified of the appraisement. If this representative of the Bureau of Animal Industry confirms the diagnosis and approves the appraisement the Department of Agriculture will purchase the diseased animal of the owner and pay such a proportion of the appraised value as is provided for compensation in such cases by the laws of the

te in which the animals are located, when they are condemned slaughtered by State authority.

DISINFECTION.

12. All necessary disinfection will be conducted by the employees of the Bureau of Animal Industry.

INOCULATION.

13. Inoculation is not recommended by the Department of Agriculture, and it is believed that its adoption with animals that to be afterwards sold to go into other herds would counteract good results which would otherwise follow from the slaughter of the deceased animals. It may, however be practiced by State authorities under the following rules:

14. No herds but those in which pleuro-pneumonia has appeared are to be inoculated.

15. Inoculated herds are to be quarantined with lock and key and on each animal, the quarantine restrictions are to remain in force as long as any inoculated cattle survive, and these animals are not to leave the premises only for immediate slaughter.

16. Fresh animals are to be taken into inoculated herds only at the risk of the owner, and shall be subject to the same rules as the other cattle of the inoculated herd.

17. The chief of the Bureau of Animal Industry is to be promptly notified by the State authorities of each herd inoculated, of the final disposition of each member of the herd, of the post-mortem appearances, and of any other facts in the history of the herd which may prove of value.

The co-operation of Governors, of State live-stock commissioners, and of other officers who may be in charge of the branch of the service provided for the control of the contagious diseases of animals in the States where pleuro-pneumonia exists, is earnestly requested under these rules and regulations, which have been framed with a view of securing uniform and efficient action throughout the whole infected district. It is hoped that with a vigorous enforcement of such regulations, the disease may be prevented from extending beyond its present limits, and may be at some time entirely eradicated.

NORMAN J. COLMAN, *Commissioner of Agriculture.*

SOCIETY MEETINGS.

NATIONAL VETERINARY ASSOCIATION OF GREAT BRITAIN.

The fourth annual meeting of the National Veterinary Association opened Edinburgh yesterday, and will be continued over to-day. The members of council met at ten o'clock in the offices of the Highland and Agricultural Society, George IV. Bridge, Principal Walley, of the Royal (Dick) Veterinary College, Edinburgh, presiding. It was agreed to recommend to the general meeting that the next year's meeting should be held at Peterborough, and Mr. Mackinder of the city was nominated President for the year. The following were nominated Vice-Presidents:—Captain Russell, Grantham; Mr. Hardie, Sleaforth; Mr. Runciman, Market Deeping; Mr. Joseph Axe, Doncaster; Mr. Wiggins, Market Harborough; and Mr. Santy, Norwich. Mr. F. W. Wragg, London, was nominated for re-election as Treasurer, and Mr. George A. Banham, Cambridge, as Secretary. The report of the Secretary stated that there were now 310 members of the Association, being an increase of 34 in the year. A series of questionnaires have been issued asking information upon the different branches of horse-shoeing and the answers will be embodied in a paper for next meeting. At the general meeting held afterwards—Principal Walley in the chair—the nomination of office bearers was confirmed, and the other recommendations of the council were also adopted. A suggestion by Professor M'Call, Glasgow, that the next meeting be held two years hence, was not pressed.

The President, in his opening address, welcomed the Association to Edinburgh, which to all veterinary surgeons, he said, was classical ground, for here upwards of a century ago, the pioneer and father of veterinary surgery was born, and upwards of seventy years ago he commenced, under disadvantageous circumstances, to teach the practice of veterinary medicine. It was a fortunate day for the profession when Professor Dick turned his back on the London Veterinary College, and sturdily retraced his steps to Scotland and established a veterinary school of his own. Having referred to the fact that Edinburgh was the only city in the United Kingdom that was able to support more than one veterinary school, Principal Walley made a kindly allusion to the recognition given to their profession by the Highland and Agricultural Society for sixty years. After sketching the origin and progress of the National Veterinary Association, and the objects had in view, the President briefly remarked on the immense strides made in the unification and consolidation of the profession during the last twenty years, and in conclusion, expressed the hope that the day was not far distant when the Government would recognize the importance of the veterinary profession in the economy of the country by extending to it a helping hand. On the motion of Principal Williams—who referred to the valuable services to scientific thought of the late John Barlow—a hearty vote of thanks was given to Principal Walley for his address.

HOMŒOPATHY IN THE TREATMENT OF ANIMALS.

The first paper taken up for discussion was one by Mr. J. S. Hundall, Liverpool, on the question—"Can experimental pathogenesis be rendered useful in elucidating a definite system of veterinary therapeutics?" The writer asserted

t their therapeutics were not up to present day practice, and called aloud for revision. The teaching of therapeutics in the schools was inadequate to fit their members for their duties, if they were to have an enlightened scientific method of administering drugs, and not a bald, empirical method. He proceeded to refer to some diseases or morbid conditions which caused the practitioner considerable anxiety, and he argued from the methods of treatment that there was urgent necessity for a revision of their therapeutics. He took as an illustration bronchitis, recommended the administration of aconite and bryonia. Pathogenetic experimentation on animals in health was, he said, not only reasonable, but likely to prove of the highest value to the veterinary profession, provided they were carried out systematically and with the closest observation.

Mr. T. Hopkins, Manchester, who opened the discussion on the paper, rebated the views of the essayist and demurred to his recommendation that they should rely so largely on drugs. Without the *vis naturæ* they might throw nothing but sticks to the dogs. Mr. Pottie, Paisley, took a similar view, but suggested that a special committee be appointed to experiment on the lines recommended by Mr. Randall. His experience showed that bleeding was far superior to aconite when it was necessary. Mr. Cameron, North Berwick, favored the administration of large instead of small doses of aconite. Mr. Greaves, Manchester, thought that, in many cases where homœopathy got the credit of curing disease, it was nature that had more to be thanked than medicine. Principal Williams thought the paper had a high-sounding title, but it really amounted to nothing but homœopathy. The principal of treating disease with the view of combating the symptoms was irrational. Physiologically, aconite had the effect of soothing and reducing the action of the heart, but it had no specific effect on the cerebral tubes. It gave the animal repose, and they all knew that rest was the best factor in the cure of disease. But because they should follow the dictates of nature in the treatment of disease, he did not support the notion that nature ought to be allowed to take its course without any remedy being attempted. It was as by following the dictates of nature, by the scientific application of remedies when required, by a reliance on the *vis medicatrix naturæ*, and by abandoning the "heroic measures" that appertained in his younger days, that they would be successful in their treatment. Dr. Fleming, London, said the better they understood physiological processes the better could they carry out pathological treatment. As a veterinary surgeon of over twenty-five years' experience, he himself gave a dose of medicine, and he had been as successful as other practitioners. He impressed upon young members of the profession that they should use less medicine, and attend more to the requirements of nature. Professor Black, Glasgow; Mr. Kidd, Hungerford; and Professor M'Fadyean, Edinburgh, continued the discussion, after which the company adjourned for luncheon. On resuming, the discussion was continued by Mr. M'Callum, Edinburgh, who criticized the paper, and said it went altogether against his twenty years' experience, especially with regard to the application of aconite. Mr. Kidd, Hungerford, and Mr. Greaves, Manchester, having added a few remarks giving their experience in the administration of aconite, Principal Walley said he would administer aconite in certain circumstances, but not in those recommended by the essayist. He drew from experience that they could give aconite with bicarbonate of potash or

other alkaloid, providing they gave it in ball form, but if administered as draught the chances were they would kill their subject. Mr. Hurndall, replying on the discussion, said he did not underate the power of nature, but contended that nature was incapable of doing all that was required. Relying upon nature unaided was like trusting to a broken reed. He agreed that they could not cure disease, but could only assist nature, and that was what he aimed at. He regretted the introduction of the term "homœopathy." His object had been, not to sustain the principles of homœopathy, but to convince them that investigation into the action of drugs was an essential at this time. He admitted that the principles he advocated was adopted by homœopaths, but that was an entirely different matter. His practice might be a limited one, but he invariably trusted to aconite in cases of colic, and he had yet to lose his first case. On the motion of Mr. Wragg a vote of thanks was given to Mr. Hurndall for his paper.

MICRO-PARASITE IN ANIMALS.

The next subject taken up was "Notes on some of the micro-parasites of the domesticated animals," by Professor M'Fadyean, of the royal Veterinary College and Dr. Sims Woodhead, Pathologist to the Royal Infirmary, in which they treated of splenic apoplexy, splenic fever, anthrax, quarter-evil, black-leg, glanders, swine fever, tubercle in the udders of cattle and in milk, and loup-ill. Having narrated the symptoms of the various diseases, and given a résumé of the investigations by scientists, the essayists indicate the conclusions at which they have arrived. With regard to anthrax, they are of opinion—(1) That Pasteur has succeeded in preparing a vaccin by the employment of which the domestic ruminants are put in possession of a high degree of immunity against spontaneous or inoculated anthrax; (2) that by no known method of attenuation can there be obtained a vaccin of absolutely uniform strength; (3) that it is not possible to obtain a vaccin that is at once and equally applicable to all the different species of domestic animals, or even to all the different breeds of the same species; and (4) that, even in the most capable hands, accidents capable of entailing serious results may happen in the preparation of vaccin, or in its employment. Dealing with loup-ill in sheep, the writers combat at length the views of Professor Williams, in his report to the Highland and Agricultural Society in 1883, in which he claimed to have proved that the disease was of a micro-parasitic nature, being caused by a bacillus. Why, they ask, "if Professor Williams suspected the presence of a micro-organism in the ticks, did he not examine the tick directly instead of taking the round-about method of incubating the tick in mutton brood? Again, does Professor Williams really mean anybody to believe that he ever succeeded in getting a pure cultivation by incubating a tick? or does he mean that he could find a tick anywhere whose body is germ-free? We really would refuse to credit Professor Williams with this belief, were it not that we have to choose between that and believing that he attempted, in his reports, to play a huge joke at the expense of the non-scientific members of the Highland and Agricultural Society. And, again, we fail to see the necessity of bringing in the tick to explain the mode of infection of the sheep. If there was a difficulty in understanding how the organism could gain access to the system of a sheep except by the inoculation of a tick, it still remains to explain the mystery of how the organism

gets into the tick. But who ever heard of an intermediary bearer being necessary to complete the life-history of a bacillus? Lastly, and perhaps we ought to have taken this first, it surely was a strange proceeding, on the part of one investigating a particular disease, to come to the conclusion that the disease was a micro-parasitic one, and not attempt to prove it." In concluding their criticism of Professor Williams' report the essayists say they would commend to notice the conditions formulated by Koch, and now universally accepted, as standing fulfilment in every case, before it can be held proved that any disease is caused by a particular micro-organism:—“(1) It must be shown that in every case of that particular disease the organism is present in the tissues or fluids of the diseased animal. (2) *Pure* cultivations, started from the tissues or fluids of the diseased animal, must be carried on through successive generations outside the body. (3) The disease must be excited in the body of a healthy subject by injecting it with a portion of such a pure cultivation. (4) In the body of this last subject microscopic examination must demonstrate the same micro-organisms as are present in the subjects of the disease spontaneously contracted. With how many of these conditions has Professor Williams complied in his investigation of louping-ill? None. These investigations, therefore prove nothing, except that Professor Williams neglected the most elementary details of bacteriological research.”

Mr. Rutherford, Edinburgh, in proposing that Dr. Hunter, of the New Veterinary College, Edinburgh, open the discussion on the paper, said he was sorry that the manner in which the subject had been treated reflected no credit on the writers of the paper. Professor McFadyean was a young and might be an eminent bacteriologist and sarcastic critic, but he was sure the members would agree with him that he had not treated this subject in a proper spirit. He expressed the very sincere hope that in future papers of the Association no member would ever dare to send such a paper to his brother members, or he (Mr. Rutherford) would move that it be deleted from the agenda. (Hear, hear.)

Professor Hunter traversed the views of the essayists in dealing with Professor Williams' report on louping-ill, and said the critics had overshot the mark in making allowance for future discoveries. If that portion of the paper had been torn out and given to him, he would have said that it never formed a part of the Association's proceedings, but was the production of a fourth-rate American newspaper. Having supported the investigations of Professor Williams, and admitted that his report was justified by the results, Dr. Hunter said that until something better could be shown than Professor Williams had done, it was the part of any man, be he practitioner or not, to run down his work until something better to put in its place. (Applause.)

Principal Williams said perhaps it would be wiser in him to take no notice of the last part of the paper, which reflected very much on himself. The meeting would probably take Mr. Rutherford's remarks as the feeling of most of the members regarding such a severe and personal criticism on the work which he had done towards what he thought was the advancement of his profession. He was very much surprised to find the name of Dr. Woodhead on that paper. As another gentleman, he was not at all surprised; his motive was not far to seek. In dealing with the criticism on his paper, the Principal said he had

destroyed sheep, and had had the spinal canal opened within ten minutes after death, and he had found the organism which he called bacillis, and the existence of which seemed to be doubted by the writers of the paper. He had done so, not once, but hundreds of times, and he thought he was justified in arriving at the conclusion that that organism had something to do with the disease. He had not, as his critics said, "perpetrated a huge joke at the expense of the Highland and Agricultural Society." He had too much respect for the members of that society, to whom he himself and the veterinary profession in Scotland were very much indebted, and he could not think of any other object the writers had in view than to damage him in the eyes of the members of that society. He believed, however, that the paper was the work not of two men, but of one. They had thought proper to tender him, who had worked with the microscope probably before either of them was born, a beautiful piece of advice in their concluding remarks. Their third commendation to him was that "the disease must be excited in the body of a healthy subject by infecting it with a portion of such a pure cultivation." That was quite enough for him. They were all aware that pleuro-pneumonia was a contagious disease, and he would ask if any man had ever induced that disease by inoculation? (A voice, "Never.") The feet were knocked from under them by that third recommendation. But there were other errors in the paper which proved to him that it was written by a 'prentice hand.

Professor McFadyean said nobody denied that pleuro-pneumonia was contagious, but that was a different thing from saying that it was due to a micro-organism.

Principal Williams said that if Professor McFadyean took that line he would deny anything, for he (Principal Williams) maintained that it was a micro-organism.

Principal Williams and several of the other gentlemen who had taken part in the proceedings, left the meeting at this stage; and the President said, as some of those who had gone had spoken somewhat strongly regarding the authors of the paper, he thought it would be perhaps well that the reply of Dr. Woodhead and Professor McFadyean should stand over till next day.

Mr. Bell, Carlisle, said he should be happy to come there the next day and hear the discussion, but on reading the latter part of the paper he could not but think that the attack made on Professor Williams had been a personal one.

Dr. Woodhead said that for himself he preferred to give his reply in the presence of Professor Williams. It struck him that the speakers had put down as personal what he regarded as a purely scientific matter. No one had a greater admiration for Professor Williams than himself, but he felt that too much had been made of the personal question, which had not weighed with him at all.

Professor McFadyean concurred in Dr. Woodhead's remarks, and said he would have a few words to say next day for the benefit of Professor Williams and for some other gentlemen who had measured his corn in their bushel.

On the motion of Mr. Bell, the discussion was adjourned till to-day, and the company separated shortly before six o'clock.

THE LUNCHEON.

At the luncheon in the afternoon, which took place in the Waterloo Hotel

ere were upwards of a hundred gentlemen present. Principal Walley occupied the chair, and Principal Williams and Dr. Fleming, London, were the croupiers. Among those supporting the Chairman were Bailies Cranston, Anderson and Turnbull; Councillor Tait; Mr. Adam, City Chamberlain; Mr. Skinner, Town Clerk; Mr. Harris, Depute Town Clerk; Mr. Campbell, Depute City Clerk; Professor Simpson; Colonel Borthwick, Chief Constable of Mid-Lothian; Captain Henderson, Chief Constable of the city; and Mr. F. N. Menzies, Secretary of the Highland and Agricultural Society. After the loyal toasts had been proposed from the chair, Mr. Simpson, Windsor, gave "Prosperity to the city of Edinburgh," referring to the great improvements that had been effected in the city since he last visited it thirty years ago. Bailie Cranston acknowledged the toast. Professor Williams, in proposing "The University of Edinburgh," said that in all probability there would not have been even one veterinary school in Edinburgh to-day but for the great encouragement extended to Professor Dick and the University professors. Professor Simpson replied for the toast. Dr. Fleming gave "The Highland and Agricultural Society of Scotland," speaking of the great assistance rendered by the society, not only to agriculture, but to veterinary science. He coupled the toast with the name of Mr. F. N. Menzies, who briefly replied. Bailie Anderson proposed "Prosperity to the National Veterinary Association," for which the President (Principal Walley) replied. The company then adjourned.

A supper and dance took place in the Waterloo Rooms in the evening.

CRUELTY TO CATTLE.

The President has given notice that he will move—

"That the practice of overstocking the udders of cows for sale and show purposes is an act of gross cruelty; that it is sufficient to prove cruelty when the udder is found to be distended to its utmost, to be hard, painful, and unyielding to the touch, and when the animal shows signs of pain by uneasy movements of the hind limbs, and by straddling gait in progression; that it is an act of cruelty to leave the udder of a newly-calved cow for a longer period than eight hours without removing the milk, or the greater part of it, therefrom.

"That the practice of dishorning cattle by sawing or cutting off the horn through its centre or its base is unnecessary and cruel; that for the purpose of preventing cattle from injuring each other, it is sufficient to remove so much of the horn as to expose the end of the core, or, in the case of young cattle up to six months old, to saw off the end of the horn obliquely from before backwards in the latter process, as the horn grows, causing it to turn in a backward direction."

A HIGHER DEGREE FOR THE PROFESSION.

The President has also given notice of the following motion for to-day :

"That the time has now arrived when it is advisable that a higher degree be instituted, that of Doctor of Veterinary Medicine—than that of Fellow should be instituted by the Royal College of Veterinary Surgeons, this being necessary to place the profession on the same footing as that enjoyed by other professions and sciences.

SECOND DAY, JULY 23, 1886.

The annual gathering of the National Veterinary Association was brought to a

close yesterday in the Highland Society's Offices, George IV. Bridge, Edinburgh. Principal Walley, of the Royal (Dick) Veterinary College, again presided.

MICRO-PARASITES IN ANIMALS.

The first business was the reply of Dr. Woodhead and Professor M'Fadzean to the discussion on their paper on "Micro-Parasites of the Domestic Animals," which was adjourned from the previous day because of the absence of Professor Williams, whose views on louping-ill in sheep were combatted by the essayists. Principal Williams was again absent yesterday when the discussion was resumed. The President said he regretted the tone of the discussion on this paper, for there was an immense amount of really good and valuable material in it. While acknowledging the amount of work done by Professor Williams and those associated with him, he could not agree with him that louping-ill was due to such an organism as that which he had discovered. He (the President) looked upon louping-ill as purely and simply a dietetic and climatic disease, and not due to any parasitic organism. The presence of such organisms in sheep was accidental, and by allowing the blood to get out of order they could be produced in the human body. It was admitted by practical shepherds in Roxburghshire and elsewhere that they had only to turn cattle on to the pastures at the end of the season and they would get rid of louping-ill, thus proving that it was simply a dietetic disease.

Dr. Woodhead disclaimed any intention on the part of Professor M'Fadzean or himself of conveying insult to such a distinguished man in the profession as Principal Williams. They apologized to Professor Williams for anything that he might construe into a personal insult—(applause)—but they did not retract a single statement as to the matters put forward by Principal Williams in his report to the Highland and Agricultural Society on louping-ill. Micro-organisms were a debateable point, but they believed the evidence was in favor of a single species at some particular stage of its life being the pathogenetic agent of the disease and, as a rule, that pathogenetic organism was found in only one stage of its existence. He hoped Professor Williams would continue his researches into the causes of louping-ill, although he dissented from the conclusions at which he had arrived as the result of his investigations.

Professor M'Fadzean also expressed regret that the element of personality had crept into the discussion and he specially resented the remarks of Mr. Ruthven, whom he did not consider the censor of professional ethics. The remarks of Professor Williams had caused him great annoyance, because of his assertion that he (Professor M'Fadzean) had been endeavoring to discredit him in the eyes of the members of the Highland and Agricultural Society. That assertion did him great injustice, and did Professor Williams great dishonor, for nothing could have been further from his intention than to reflect on Professor Williams' position in regard to that Society. He had a great admiration for Principal Williams' work, but he was not to be debarred from criticising his writings or public statements, and while he admitted that Principal Williams was a great practitioner, as a bacteriologist he was nowhere. Professor Williams had tried to throw dust in the eyes of the Association, and had avoided the main points of the paper. He declined to be drawn into a statement as to what share Dr. Woodhead and himself had had in writing the paper; but he might say that Professor

Williams was singularly incorrect in his selection of passages to prove that his share in the paper was in that portion which criticised his work. It would be ill to deny Professor Williams any satisfaction he might derive from the statement that he had used the microscope before either Dr. Woodhead or himself born, but such assertions were not argument.

The President said that in spite of all that had passed he thought the work of Woodhead and Professor M'Fadzean deserved the thanks of the Association. He had undertaken the duty of preparing the paper at his own request. He asked them to do so, because he had long felt that if their profession was so intimately associated with medical men in their daily work they would not make the remarkable statement so often made by members of the medical profession with reference to the diseases of animals as affecting men. He hoped to see the day when the professions would work more together. (Applause).

On the motion of Mr. Campbell, Kirkcudbright, seconded by Mr. Cameron, North Berwick, a vote of thanks was awarded to the writers of the paper, and Woodhead acknowledged the compliment.

LAMENESS IN HORSES.

Mr. William Hunting, London, submitted a paper on "Lameness in Horses," in which he described the symptoms of the various phases of lameness, and made local reference to the difficulty of diagnosing. He impressed upon them the danger of hasty diagnosis, and urged that a correct diagnosis was more likely to be arrived at by a cool, logical exercise of the brain than by the hasty generalization of intuition. The direct causes of lameness were pain, mechanical interference, defective innervation, and the symptoms were local tangible changes and variations in the position and action of the limb. Position and action were valuable guides to a correct diagnosis, which was not intuitive, and was not a guess.

Mr. T. H. Simcocks, Drogheda, supported the views of the essayist, and said that the veterinary profession would be thought more of if they were less hasty in forming an opinion. Mr. Henry Hunter, Newcastle, thought Mr. Hunting had exaggerated the power of diagnosing cases by the gait of the animal. There were many cases in which that could be done, although there were more in which it would be difficult to arrive at a proper conclusion without careful observation.

Mr. M'Grigor, Bedlington, mentioned that twenty-five years ago there was an old man in the city who used to buy lame horses and bring them under Professor Lee's treatment, and they were made wonderfully useful. Mr. Walter, Halburton, brought under the notice of the meeting a form of lameness which was laminitis, and which the President attributed to imperfect washing. Mr. Pottier, Ley, referred to the great diversity of opinion that existed in the profession as to lameness, as was shown in the evidence given in legal cases, and said it would be of great benefit if they could come to some agreement on the matter.

Professor W. O. Williams, New Veterinary College, Edinburgh, recommended observers to make notes of the length of the stride made by animals going straight which would greatly assist their diagnosis. Principal Williams agreed with the essayist that a correct diagnosis was only to be obtained by a careful study of anatomy, and the action of the various muscles concerned in locomotion. The discussion was continued by Mr. Cameron, North Berwick; Mr. Campbell, Kirkcudbright; Mr. Greaves, Manchester; Mr. Simpson, Maidenhead; Mr.

M'Gavin, Welshpool; Mr. Roberts, Kendal; and Mr. Baird, Jr., Edinburgh. The President, in closing the discussion, said lameness was generally due to pain, but frequently to defective action. In the prosecutions for cruelty to animals there were many instances in which it was said that it would be cruelty to work the animal, although in reality it suffered no pain whatever, but was simply lame from defective action. These were the cases in which veterinary evidence was of value. He could not see how any veterinary surgeon could make a mistake in distinguishing between knee and foot lameness; but generally in diagnosing the best thing to do was to follow the legal example in Scotland, and "take the case to *avizandum*." On the motion of Principal Williams, seconded by Mr. M'Callum, Edinburgh, Mr. Hunting was cordially thanked for his paper.

THE USE OF ANÆSTHETICS.

The next paper taken up was one by Professor W. O. Williams, Edinburgh, and Mr. R. Roberts, Kendal, on "Anæsthetics and Anæsthesia in Relation to Veterinary Practice." The writers submitted a table of queries put to the heads of the various veterinary schools in Europe on the use of anæsthetics and the replies received to these queries. They gave their own experience as follows:—"Chloroform is the best general anæsthetic. For the horse, from one and a half to two ounces usually suffices to produce insensibility for a sufficient length of time to perform a short operation. For the cow, about two ounces is required; and for the dog, about an ounce. We find that to produce a short and perfect anæsthesia the less air admitted the better. In fact, we not only cause chloroform anæsthesia, but also carbonic acid anæsthesia. It takes from five to ten minutes to produce this condition, and with this method there is little or no excitement, but when the chloroform is administered with a large quantity of air there is almost always great excitement. If the animal does not recover from the narcosis in from ten to twenty minutes after the inhalation has been stopped we apply cold water to the head and give inhalations of ammonia. Neither of us have had a single death, and we have both performed very serious and long operations. Mr. Roberts administers anæsthetics in castration, parturition in mares, cows and bitches, removal of tumors, colic and intestinal pains, also to cause the painless death of animals. Mr. Owen Williams administers anæsthetics in castration of cryptorchids, removal of tumors, extraction of teeth in dogs and cats, and in causing painless death in old or useless animals, and in all serious operations. As a local anæsthetic we used cocaine, varying in quantity according to the affection, and paint it on to the parts at intervals of five minutes for half an hour before operating. Mr. Owen Williams has used cocaine in painful eye affections, has relieved the pain, and been thus enabled to apply other drugs to the parts without irritating the patient; he has also used it for the removal of vaginal tumors in the bitch, and in one case the animal watched the operations without either being tied or muzzled, and showed no symptoms of pain. We do not think that the administration of chloroform or cocaine interferes at all with the healing of the surgical wounds. Mr. Simpson, Windsor, who opened the discussion on the paper, said the study of anæsthetics was one of the most prominent subjects before the veterinary world, and they must expect before long that they would be called upon to introduce chloroform and other agents extensively. Mr. Olver, Tamworth; Mr. M'Gavin, Welshpool; Mr. Toop, Knares-

ugh; Mr. Hopkins, Manchester; Mr. Baird, Jr.; Mr. Greaves, Manchester; Simpson, Maidenhead; and Mr. Briggs, Bury, bore their testimony to the use of anæsthetics; and the President and Principal Williams expressed the opinion that they would follow the example of the medical profession, and administer anæsthetics in all possible cases where pain would be caused by the operation. Mr. Roberts having supplemented the statements in the paper by giving his personal experience in the administration of anæsthetics, the essayists were, on the motion of Mr. Simpson, Windsor, awarded a vote of thanks.

MINOR SUBJECTS.

The President asked if it was the pleasure of the Association that he should proceed with the following motions, which, according to the rules, required to be carried to the meeting without discussion, viz.:—

That the practice of overstocking the udders of cows for sale and show purposes is an act of gross cruelty; that it is sufficient to prove cruelty when the udder is found to be distended to its utmost, to be hard, painful, and unyielding to touch, and when the animal shows signs of pain by uneasy movements of the limbs and by straddling gait in progression; that it is an act of cruelty to keep the udder of a newly-calved cow for a longer period than eight hours without removing the milk, or the greater part of it, therefrom.

That the practice of dishorning cattle by sawing or cutting off the horn above its centre or its base is unnecessary and cruel; that for the purpose of preventing cattle from injuring each other, it is sufficient to remove so much of the horn as to expose the end of the core, or, in the case of young cattle up to six months old, to saw off the end of the horn obliquely from before backwards in the latter process, as the horn grows, causing it to turn in a backward direction.

That the time has now arrived when it is advisable that a higher degree—viz., that of Doctor of Veterinary Medicine—than that of Fellow should be substituted in the Royal College of Veterinary Surgeons, this being necessary to place the College on the same footing as that enjoyed by other professions and the Universities.

Several members were of opinion that such important subjects could not be carried without discussion; and on the motion of Mr. Simpson, Maidenhead, seconded by Mr. Briggs, Bury, it was agreed that the motions be postponed, so that an opportunity might be afforded of having them placed on the agenda and fully discussed at next meeting.

Notes of thanks were then passed to the Highland and Agricultural Society for the use of their rooms; to the Lord Provost, Magistrates, and Town Council, for their reception; and to the firms who exhibited drugs and instruments. A complimentary having been paid to the President, the meeting terminated at seven after six o'clock.

RECEPTION IN THE CITY CHAMBERS.

At one o'clock the Lord Provost, Magistrates, and Town Council gave a reception to the members of the Association in the City Chambers, where cake and wine were served. Lord Provost Clark presided, and he was supported by Mr. Prin-Valley, Principal Williams, Professor Annandale, Professor Smith, Toron-

to; Mr. Graves, Manchester; Mr. Harry Oliver, Tamworth; Bailie Russell, and Bailie Walcot. The croupiers were Bailies Cranston, Roberts, and Turnbull. The Lord Provost having extended a hearty welcome to the members, proposed the usual toasts, after which his Lordship gave "The National Veterinary Association," making special reference to Professor Dick's connection with the city. The veterinary profession, he said, was distinguished for its acts of kindness to dumb animals. Unfortunately there were some people who were not so disposed as they saw in the Police Court from time to time, but he had been struck by the affection that had been shown by cabmen to their horses, which could be seen on the streets of the city. He believed Edinburgh was the only city which could boast of two veterinary colleges. They were both the offspring of Professor Dick, and there was a happy rivalry between them. (Applause.) He coupled the toast with the names of Principal Walley and Principal Williams. Bailie Cranston, in supplementing the Lord Provost's remarks, said he had the pleasure of knowing Professor Dick, who sat in the Town Council for several years. His whole life was characteristic of what he did for the profession. (Applause.) He hoped many present would follow the example of Professor Dick, and not only found colleges, but endow them. (Laughter.) At the present time there were about a hundred men working at the reconstruction of the Royal College in Clydeside Street, and when it was finished it would be second to none in the country. Principal Walley, in replying to the toast, said that was the Association's first visit to Scotland, but he was sure they would long remember that day as one of the brightest they had ever had. (Applause.) Principal Williams also acknowledged the toast, and in doing so, said Principal Walley and he worked harmoniously together in promoting the success of the gathering. As to competition in veterinary teaching, he thought that was entirely wrong. His opinion was that there should be one great veterinary school in the United Kingdom, so that they might have specialists whom they could pay for teaching the various subjects. (Hear, hear.) Mr. Graves, Manchester, proposed "The Health of the Lord Provost and Prosperity to the City of Edinburgh." The Lord Provost having acknowledged the toast, Professor Smith, Toronto, as a student of Professor Dick's who had been absent from this country for twenty-five years, bore testimony to the regard in which his name was held throughout the American continent. He concluded by proposing "The University of Edinburgh." Professor Annandale, whose name was coupled with the toast, said that if veterinary surgeons went on as they were doing, improving their education and their curriculum, the profession would soon be second to none in the country. Apologizing for his inadequacy to do justice to the toast, the Professor said he would rather perform "a little operation" than make a speech. (Laughter.) Principal Walley gave "The Visitors," for whom Mr. Hammond, of the Army Veterinary Department, responded. The Lord Provost then gave "Happy to meet, sorry to part, and happy to meet again," and the company separated.

VALUABLE CATTLE TO BE KILLED.—The large herds of cattle at the Levis Quarantine, valued at \$200,000, are to be killed to prevent the spread of contagious pneumonia.

OHIO STATE VETERINARY MEDICAL ASSOCIATION.

A meeting of the Ohio State Veterinary Medical Association was held at Dayton, O., June 16th, in the City Council Chambers, City Hall. Dr. T. Bent Cotton, President of the Association, called the meeting to order in a neat and appropriate speech, stating that he thought best not to occupy the valuable time of the association by making a lengthy speech but he hoped that the present meeting would prove as pleasant and profitable as other preceding meetings had, and also stated that he hoped the Association would continue to work as harmoniously as it did in the past, that there was a great many important subjects to be discussed, and thought we had better proceed at once to the business of the Association. Owing to the absence of Dr. Lubrow, Recording Secretary, Dr. J. S. Butler was unanimously elected to the office for the present meeting.

About 25 members answered to the roll call from different parts of the State, showing the interest that is taken in the work of advancing the veterinary art in Ohio.

Several short communications were read from different members of the profession expressing regret that they could not be present and assist in the good work. Two very encouraging letters were received. One from Dr. Liautard, principal of the American Veterinary College, another from Dr. Smith, principal of the Ontario Veterinary College, Toronto, Ontario.

Two members were admitted to membership under a suspension of the rules, both being graduates of the Ontario Veterinary College, John E. Campbell, Alliance, O., W. Shaw, Dayton, O., both being vouched for by two members. The motion being passed and found clear they were both duly elected and introduced to the members present.

The following gentlemen were elected to honorary membership: Prof. Geo. Manning, author of several excellent veterinary works; Prof. A. Liautard, principal American Veterinary College; Prof. A. Smith, principal Ontario Veterinary College; Prof. McEachran, principal Montreal Veterinary College.

The Corresponding Secretary was instructed to inform each gentleman of the action of this Association.

Dr. J. C. Meyer, Jr., read a very able paper on the different methods of casting horses and showed some very good specimens of fractured vertebrae, the result of careless casting and confining of horses. A majority of the members present expressed their views on casting.

The operating table was discussed and the members were somewhat divided in opinion as to its merits.

Dr. Howe, of Dayton, spoke of the use of cocaine and its advantages in operating.

A prominent physician of Dayton spoke of the administration of chloroform to dogs, and out of about seventy-five which he had administered it to all died under its influence.

Dr. Fair stated that he was much surprised to learn that the doctor had met such discouraging results and he feared it was all due to not admitting sufficient fresh air while the drug was being given, that from his own experience he never lost one that way and never hesitated in giving it to dogs.

Drs. Meyer, Newton, Howe and several other members present spoke of the good success they had met with in the administration of anæsthetics to dogs.

The subject of how to treat parturient apoplexy was fully discussed, and many valuable prescriptions were given. Dr. Smith related two well marked cases which he treated successfully. One very strange feature pertaining to treatment of parturient fever, is that no two practitioners rely on the same remedies.

A motion was made to adjourn to meet the following evening at 7.30 o'clock. Dr. Howe of Dayton invited the members and their families to take a drive to the Soldiers' Home at eight o'clock the following morning, which was accepted, and a more pleasant half day could not have been spent. Every person present expressed their thanks for the doctor's kind hospitality. By the way, to some of the readers of the REVIEW it may be interesting for them to know that the Soldiers' Home accommodates four thousand one hundred soldiers. The grounds and buildings are neat and tasty and the seven hundred acres of land with its fine walks and drives, flower gardens, lakes and other attractions, all go to make it one of the most attractive spots in Ohio—one well worth seeing. Everything about the home is conducted in a business-like and systematic way, which certainly reflects great credit on the management.

The Dayton Driving Park Company tendered the members of the Association complimentary tickets to attend the races in the afternoon, which were accepted and enjoyed, as the sport was of first-class order. One feature which gave general satisfaction, was the even starts effected by Mr. R. J. Wheeler of Toledo, who by the way, is an expert at starting horses.

The evening session was called to order, President Cotton in the chair.

W. C. Fair then read a lengthy paper on lameness, giving the causes, symptoms and treatment of many kinds of lameness. Nearly every member present spoke of some interesting case he had treated, and considerable discussion was indulged in with reference to the different methods adopted in the treatment of strains both of tendons, ligaments and muscles. The subject of treating spavin was fully discussed.

Prof. Detmars spoke of bad shoeing being one great cause of bone spavin lameness, and he would say that two-thirds of the lameness was caused by bad shoeing, and not one-half as Dr. Fair had stated in his paper; that is, of all lameness—not spavin alone.

Dr. Hillock spoke of his success in treating old horses for spavin, and at that point he must differ with Dr. Fair, who stated that few horses older than five years ever recovered in cities from bone spavin lameness.

Dr. Detmars made a very nice speech on bone diseases, and supported Dr. Fair's theory of hereditary bone disease.

The subject of when and where the National Veterinary Medical Association would meet next fall was fully discussed. Columbus, Ohio, had been selected the place at which to hold the meeting this fall. Several members present thought that each State Association should be independent of all other Associations. After considerable discussion, it was decided to hold our State Association meeting at Columbus, O., during State Fair week, and it was thought advisable to suggest to the National Association that they hold their annual meeting at the same place during the State Fair week.

It was the unanimous opinion of those present that there should be only one national or United States Association, and that such meetings be open to all veterinary surgeons in the United States, where an exchange of ideas and an acquaintanceship may be made with each other.

Since holding our meeting I have received information from officers of the National Association, agreeing to hold their annual meeting at Columbus, O., on the 2d and 3d of September, at 8 o'clock A. M., in Tindal Hall, City Hall building. The Ohio State Veterinary Association holds its semi-annual meeting on September 1st in the same rooms.

A very cordial invitation is extended to all qualified veterinary surgeons, both in the United States and Canada, to be present and take part in the discussion of the many important questions that may come up. Any gentleman who may feel so inclined may read a short paper or relate any interesting cases that may be deemed of interest to the profession. A full attendance is earnestly requested.

Prof. Detmers, of Ohio State University, will read a paper on Glanders. Dr. P. Youkerman, of Cleveland, will read a paper on Medical Jurisprudence at State Association meeting.

This will be the largest gathering of qualified veterinary surgeons ever held on this continent. Reduced railroad rates can be obtained.

W. C. FAIR, V.S., Cor. Sec. A.S.V.M.A.

NOTICES OF MEETINGS.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

NEW YORK, August 18th, 1886.

Editor American Veterinary Review :

DEAR SIR,—At a meeting of the Board of Censors of the United States Veterinary Medical Association held to-day at 14 1/2 Nevins street, Brooklyn, it was unanimously decided to hold the annual meeting of the Association in New York city, Sept. 21st, at 10 A. M. Due notice will be given each member.

CH. B. MICHENER, Sec'y.

OHIO STATE VETERINARY MEDICAL ASSOCIATION.

The semi-annual meeting of this Association will be held at Columbus, Ohio, Sept. 1, 8 a. m.

W. C. FAIR, V. S. Cor. Secretary.

KANSAS STATE VETERINARY MEDICAL ASSOCIATION.

The regular meeting of the Kansas State Veterinary Medical Association will be held in Topeka, Kansas, September 16, 1886. It being the annual meeting, a general good time is anticipated. In addition to the regular business of the society papers will be read and discussed by the members upon subjects of general interest to the profession and the stock breeders.

The public will be made welcome.

A. A. HOLCOMBE, *President.*

ED. R. ALLEN, *Secretary.*

CORRESPONDENCE.

VETERINARY SURGEON WANTED.

STANTON, NEB., August 4, 1886.

Editor American Veterinary Review :

DEAR SIR.—There is a first-class opening here for a good veterinary surgeon. Can you suggest and recommend any one? I am satisfied the right kind of a man could do well.

Hoping to hear from you, I am yours respectfully,

GEO. WINEGAR.

ANOTHER CHANCE FOR A VETERINARY SURGEON.

MARSHALL, Mo., August 14, 1886

Editor American Veterinary Review :

DEAR SIR.—Please send me a buyer for my veterinary business. This is the county seat of the best county in the State of Missouri. My business is worth \$3,000 per year, and I will sell very cheap on account of other business. Have no competitors in county. When I have sold, will leave this part of the State to engage in other business, but will not give up my veterinary business for nothing so please send me a buyer if you can.

Yours, respectfully,

T. A. EDWARDS

STILL ANOTHER.

WANTED, by a large corporation, owning a large number of horses, a thoroughly reliable and competent veterinary surgeon give his entire time to the attention of the same. Must be a graduate and had practical experience.

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NEWS AND SUNDRIES.

PASTEUR'S WORK.—Professor Virchow is reported to have said, in a recent lecture at Berlin, that Pasteur had done the world a great service if he had succeeded only in allaying the fear consequent upon the bite of a mad dog.

ANTHRAX is reported raging amongst sheep in some parts of Wyoming Territory. [Why is it that veterinarians keep on ignoring the benefits to be obtained by inoculation by the methods of either Pasteur, Chauveau or Cornevin.—EDIT.]

TEXAS FEVER IN MONTANA.—Texas fever has appeared in Montana, according to the *Bad Lands Cowboy*, in which appears the following: "Near Bozeman, Montana, a herd of about one hundred cattle belonging to T. J. Carlin have been attacked by the disease, and twenty-one died up to the last of July. The herd has been quarantined and there is no danger of the disease spreading from it. The herd of Texas cattle which spread the disease is said to be on its way to the Territories, however, and will probably spread the disease widely unless stopped and quarantined. The herd is known by officials competent to act, and we look for immediate measures to be taken to stop it."

GLANDERS IN NEBRASKA.—Dr. T. S. Billings informs us that Nebraska is literally rotten with this disease and that he has confined fully twenty out of thirty horses in one farm only.

STAMPING OUT PLEURO-PNEUMONIA.—Veterinarians of the Bureau of Animal Industry have begun the work of stamping out the disease in Maryland and Virginia. Animals are appraised and paid for with the funds appropriated by Congress.

A DESERVED APPOINTMENT.—The Canadian Minister of Agriculture has appointed Prof. Andrew Smith, of the Toronto Veterinary College, to act as one of the judges at the Chicago Percheron Horse Show, Sept. 6 to 11. This completes the jury, the appointment of the Hon. George B. Loring, on the part of the United States, and the Marquis de la Motte Rogne having been previously announced in these columns. Dr. Loring and Prof. Smith are both excellent men for the place, and the French representative, from his position as Chief Inspector of the government studs, ought to be equally good; and a jury so appointed and so constituted will certainly be free from prejudice and partisan bias. The high character of the gentlemen themselves is sufficient guaranty that their work will be honestly and intelligently done.—*Breeders' Gazette*.

PLEURO-PNEUMONIA AT THE QUARANTINE STATION IN QUEBEC.—The Department of Agriculture has received advices from the Dominion Live-Stock Inspector to the effect that the entire shipment of cattle recently made from Scotland to Canada, now quarantined at Quebec, is afflicted with pleuro-pneumonia, and orders will be given that the entire lot be slaughtered and consumed at once. The shipment consisted of fifty-seven head of full-blood Galloways, owned by Hector McCrae, of Montreal, recently purchased at Kirkcaldy, Brightshire, Scotland, and valued at \$15,000. There are also 300 other cattle belonging to Andrew Allan, of Montreal; J. J. Hill, of St. Paul, Minn.; Seneca Cochrane, of Hillhurst, Canada, and W. Dawes, of Lachine, Quebec. Of this lot the greater part are black polled cattle, for which high figures were paid. The whole 357 head are valued at \$300,000. All must be sacrificed, as those not now down with the disease have been exposed during shipment. Since the exportation of these cattle has taken place pleuro pneumonia has broken out on the farms of the exporters, and the cattle have been slaughtered by the local authorities.—*National Live Stock Journal*.

AMERICAN

VETERINARY REVIEW.

EDITED AND PUBLISHED BY

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OF. R. S. HUIDEKOPER, M.D., V.S., D. J. DIXON, D.V.S., Hoboken,

AND OTHER VETERINARIANS.

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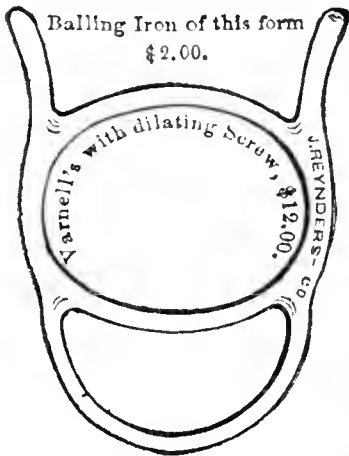
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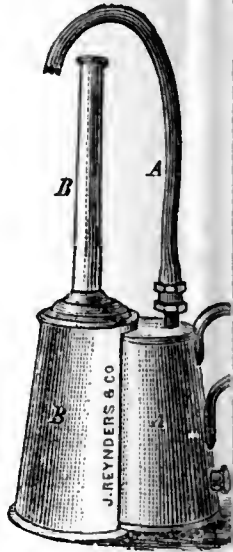
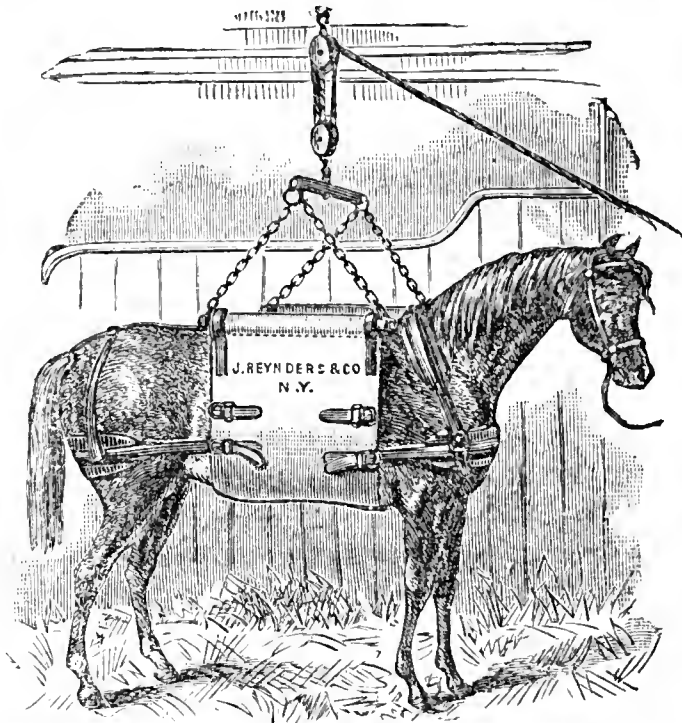
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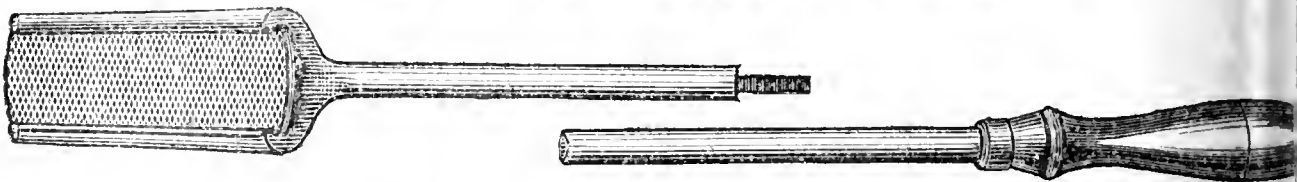
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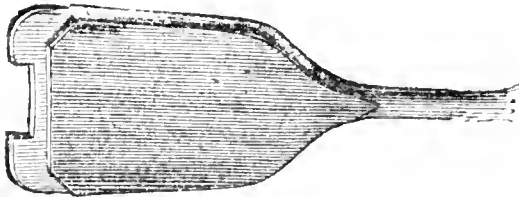
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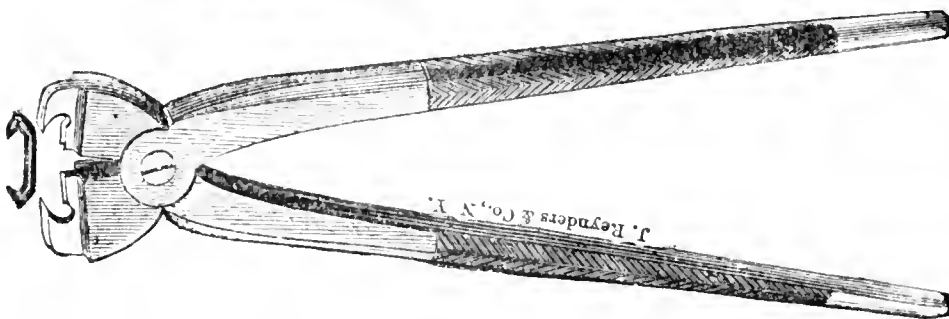
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AMERICAN VETERINARY REVIEW,

OCTOBER, 1886.

EDITORIAL.

TWENTY-THIRD ANNIVERSARY MEETING OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION at the Rossmore Hotel—why held there—but few States absent—usual absence of reports from the various committees—vote on the paper offered to compete for the Association and REVIEW prizes—Dr. T. S. Butler, Ohio, receives it—the offer of prizes to be continued, and greater competition desired for. CONTAGIOUS PLEURO-PNEUMONIA—the outbreak at Quebec—a letter to *Breeders' Gazette*. INOCULATION AGAINST ANTHRAX—the Association's Committee on Diseases again recommends it—the *Breeders' Gazette* and other papers the same—it is practised all over the world, then why not here. VETERINARY AGRICULTURAL COLLEGES—is veterinary education too complicated, and should be left to agricultural colleges to make veterinarians—is the curriculum of veterinary colleges as at present arranged, likely to deter agricultural students entering the ranks of the profession. PASTEUR AND HIS WORK, by George Hensling—an excellent companion for every veterinarian.

TWENTY-THIRD ANNUAL MEETING OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION.—By special selection (?) of a committee of the Comitia Minora of the United States Veterinary Medical Association, the twenty-third anniversary was held on the 21st of September, at the Rossmore Hotel, in this city. Why this selection was made in preference to one of the numerous appropriate halls, where similar scientific bodies are accustomed to hold their meetings, and accommodations, may seem to be a strange inquiry to make. Why a room was not engaged in the Academy of Medicine, the Law Library building, or the Cooper Union building, or why the lecture rooms of one of the two veterinary colleges of this city were overlooked is not very clear to the minds of all the members.

But whatever may have been the true inwardness of the matter, the meeting was called at the Rossmore, and there the gathering took place. In any case it proved to be a fairly interesting meeting. Six States were represented, though unfortunately, either our friends in the west had failed to appoint delegates, or the delegates had failed to respond to their appointments; the true solution of which problem may also be difficult to solve. The meeting was very much like its last predecessor, the time being almost wholly occupied in discussing the business of the Association.

The report of the committees were, according to rule, "conspicuous by their absence," the only report offered taking the form of a series of short remarks by the chairman of the Committee on Diseases, relating to some of the contagious diseases now prevailing in this country, and were substantially interesting from their practical character and the facts they embodied. By request of the Association the report is printed in the present issue of the *REVIEW*.

The most interesting feature of the meeting was the proceedings attending the vote of the Association on the papers which had been printed for the prizes offered by the Association and the editor of the *REVIEW*. These papers have been printed in previous issues of this periodical, but as the committee on that subject (not to be out of the fashion) had failed to report, and as a number of the members present had not read the articles, they were again read by the Secretary, at the request of the meeting. They were accorded an attentive hearing, and by the general vote of the meeting, the author of the paper identified by the signature of "Incognitus," the paper printed in our July number, was judged to have earned the prize and the encomium. On opening the envelope which concealed the name of the successful candidate it was found to contain that of Dr. T. S. Butler, of Ohio. The announcement of the gentleman's name was heard with loud expressions of applause, though subsequently, a rather unpleasant surprise was experienced by a portion of the members when the fact was learned that the successful essayist was not an American but a Canadian graduate, nor a member of the Association. There was, however, no alternative—the situation must be accepted.

We hope this event will serve as a stimulus to increase competition among those whose energies, it was hoped, would be specially stimulated by the institution of this offer of prizes for the best exhibition of scholarship. The prize of the Association will, we hope, be continue to be offered; that of the REVIEW is still subject to capture at the next September meeting.

CONTAGIOUS PLEURO-PNEUMONIA.—The remarks which the chairman of the Committee on Diseases submitted at the annual meeting of the National Association ought to have elicited from the Association some general discussion of the subject of the contagious diseases which prevail amongst our cattle, especially two of the number, viz: pleuro-pneumonia and anthrax. The recent outbreak at Quebec, and the rapid manner in which the Canadian authorities disposed of it, offers a sound example for our own officials in Washington. A letter headed "Red Tape," which we copy from the *Breeders' Gazette*, seems to show that according to the author, much deficiency of action has been exhibited by our veterinarians. Once more, we cannot suppress our regret that the red tape of administrative rules does not suffer veterinarians to be made acquainted with what most of us consider a duty due to the profession.

INOCULATION AGAINST ANTHRAX was also recommended in the report of the chairman of the same committee. Time and time again has the same recommendation been urged. The *Breeders' Gazette*, that most excellent paper, in one of its last issues has these remarks:

INOCULATION FOR ANTHRAX.—At the recent Edinburg meeting of the National Veterinary Association of Great Britain a paper was read prepared by Prof. McFadyen, of the Royal Veterinary College, and Dr. Woodhead, Pathologist to the Royal Infirmary, and the subject of micro-parasites of domestic animals, in which it was stated with reference to anthrax "that Pasteur has succeeded in preparing a vaccine by the employment of which the domestic ruminants are put in possession of a high degree of immunity against spontaneous or inoculated anthrax; that by no known method of attenuation can there be obtained a vaccine of absolutely uniform strength; that it is not possible to obtain a vaccine that is at once and equally applicable to all the different species of domestic animals, or even to all the different breeds of

the same species ; and that even in the most capable hands accidents capable of entailing serious results may happen in the preparation of vaccine or in its employment." Notwithstanding the intimation of "serious results" we believe the agricultural classes would gladly avail themselves of the opportunity of using vaccine as a preventative of anthrax if they could only obtain it.

These are good words, and while we regret that the *Gazette* should have failed to notice our numerous requests on that subject, we are glad to see it calling the attention of our agriculturists to a measure which has already effected so much on the continent and saved so many lives. Almost all parts of the world employ it and an article published in *Science* show to what great extent it is employed, even in India. That paper says :

PREVENTIVE VACCINATION IN INDIA.—Pasteur's system of vaccination for anthrax has been tried with triumphant success by the Indian government, acting on the advice of Mr. J. Mills, the inspector of cattle-disease for Madras. According to the official papers, ponies, donkeys, cows, bullocks, buffaloes, sheep and guinea-pigs have all been protected by vaccination from the consequences of inoculation with virus which proved fatal to unvaccinated animals. A vaccinated pony and a buffalo were sent to a village where there was an epidemic of anthrax ; and though they were herded with the diseased cattle, and grazed on the same pasture, they escaped the disease. In Burmah the elephants have been vaccinated with equal success. At first the "vaccine" was imported from France ; but the uncertainty of obtaining it pure and efficacious from any one but Pasteur himself has induced the Indian government to fit up a laboratory for the manufacture and dispensing of the fluid in Bengal ; and, if that is successful, other laboratories will be found in other centres. Mr. J. H. B. Hallen was sent, some time ago, to study in Pasteur's laboratory ; and the report recommends that all veterinary surgeons should go through such a course of instruction.

Yes, all veterinary surgeons should go through a course of instruction, or, at least, they should practice inoculation, for it is the only means to combat anthrax.

VETERINARY OR AGRICULTURAL COLLEGES.—If many of our scientific papers agree upon the necessity for improvement in veterinary education, there are however, some which yet believe that our veterinary colleges here are too serious, and that

While "it is true that the best of veterinarians do not know any too much," * * * *

veterinary practice ought to be reduced to the greatest simplicity," and all the long article which accompanies these two sentences comes to the conclusion that "no agricultural student ought ever to be satisfied to leave the agricultural college without instruction in veterinary practice." We fear the person who wrote these remarks overdid the object he had in view. Yes, we believe the agricultural student ought to have some knowledge of veterinary medicine and a perfect acquaintance with some of its branches, specially zootechny, but while we can accept some of his suggestions, we must also remind him that a little knowledge is often worse than none at all. No, veterinary education is not too complicated at present in any one of our colleges; on the contrary, the country is much in need of good, sound educated practitioners, of men who have good practical knowledge, and that is what our colleges give to their students. Many of them are graduates of agricultural colleges, who "do not hesitate to enter a veterinary course because it is so complicated, and the study of veterinary medicine seems to him like an effort to reduce a huge mountain." If there is a change that can be hoped for in veterinary education, it's a more complete curriculum and a longer period of studies. It is doubtful if as yet we are prepared for these changes in our young country.

PASTEUR AT HIS WORK.—We have received from Dr. G. Fleming his excellent pamphlet, *The Work of Pasteur, from an Agricultural and Veterinary Point of View*. It is a review of the many discoveries of the great French chemist, excellently gathered together, and written with that easy style which has rendered Fleming's writings the companions of all veterinary readers. Every member of the profession will be pleased, interested and instructed in reading Pasteur and his Work.

HYDROPHOBIA is said not to exist in Lapland; but two dogs brought from that country, having been inoculated by M. Pasteur, contracted rabies, thus proving that Lapland dogs are not refractory to the disease.—*Medical Record*.

ORIGINAL ARTICLES.

CASTRATION OF CRYPTORCHIDS.

BY M. JACOULET.

ANATOMY OF THE INGUINAL AND TESTICULAR REGIONS.

1. INGUINAL REGION. By this designation we intend to indicate the fold or hollow extending obliquely downward and inward from the external angle of the ilium to the anterior border of the pubis, separating the inferior abdominal wall from the internal face of the thigh.

In tracing this region from the superficial portions to the more deeply seated layers, we successively reach:

First. The scrotum, which is a thin, flexible and elastic skin sparsely covered with fine hairs.

Second. A fibrous, elastic membrane, closely connected with the scrotum, and known as the dartos.

Third. A layer of cellular tissue, of a more or less dense consistency, in the meshes of which and near the median line, the external pudic veins appear.

Fourth. An oval opening, through and circumscribed by the fibres of the aponeurosis of the great oblique muscle. This opening is easily felt through the skin and is known by anatomists as the external inguinal ring.

Fifth. And lastly, we have a muscular aponeurotic space, formed by the small oblique muscle against the crural ring. This space, which must occupy our special attention, corresponds with the inguinal canal of the anatomists. In well and normally formed stallions the vaginal sheath forms for it an internal lining, which transforms it into a true canal, tubulated in shape, and in which the testicular cord passes. But in horses in which the testicle has not passed outside of the abdomen, and in mares, there is, strictly speaking, no canal, and the region offers instead only a kind of slit or interstice, filled with a loose connective tissue which closes it entirely and leaves the inguinal blood vessels and nerves at its internal border.

It is this that Mr. Degive has called the *inguinal interstice* or

act. The external inguinal ring is its entrance, while further, it ends at the abdominal cavity, to be there closed by the peritoneum.

To resume then, we have: the skin and the dartos; a layer of cellular tissue; the external inguinal ring, whose internal or epubic commissure may be readily observed, and the inguinal interstice, space or tract, whose entrance is indicated by the external ring. Such are the different parts that form the inguinal region in cryptorchids.

The *inguinal interstice* or *tract*, situated between the small oblique muscle, which forms its inferior, and the crural aponeurosis, which forms its superior wall, results from the resting of these organs upon each other in the internal three quarters of their transverse diameter. Indeed, the reflex portion of the aponeurosis of the great oblique which forms the crural arch is a large band attached by one of its extremities to the external angle of the ilium, and by the other to the anterior border of the pubis in common with the prepubic tendon.

The small oblique or ilio-abdominal muscle, composed of a fleshy and an aponeurotic portion, is flabelliform. Its fleshy fibres, spreading like the limbs of a fan, radiate from the external angle of the ilium, the posteriors extending backward and upward, the centrals downward and the anteriors forward. The posteriors are inserted upon the external quarter of the crural arch. From that point and as far as the prepubic tendon, they run in front of the arch, simply lying in contact with it, curve between them and this aponeurosis, upon a space represented by the three internal quarters of the extent of this aponeurosis, a space filled with cellular tissue, constituting the *inguinal interstice* or *tract*.

It is an infundibulum, entirely flattened, assuming an oblique direction downward, backward and inward. It offers two faces or walls, one anterior and one posterior; two angles or commissures; one inferior opening or entrance, and one superior or bottom, closed by the peritoneum.

The posterior wall, also slightly external, formed by the crural arch, is strong and resisting. The anterior wall, also slightly

internal, formed by the fleshy portion of the small oblique muscle, is very mobile. Easily yielding and spreading, it readily permits the dilatation and consequent increase in size of the tract.

The internal angle or commissure is limited by the prepubic tendon at its insertion to the pubis.

The external is formed by the insertion of the fleshy fibres of the small oblique upon the crural arch on the external quarter of this aponeurosis.

The inferior opening, which is exposed by the incision of the scrotum and dartos, and by the laceration of the cellular tissue beneath, is nothing else than the external inguinal ring. Pierced through the aponeurosis of the great oblique, whose fibres separate in front, to circumscribe its oval shape, this orifice is principally well defined on its posterior border or pillar, which is formed by the crural arch, and at the internal commissure, which is indicated by the prepubic tendon. The other portions of its circumference are not well defined on account of the degeneration of the aponeurotic fibres into cellular tissue. It is on this account that the entrance to the inguinal tract becomes so very dilatable and so easily susceptible of enlargement.

The superior orifice, or bottom of the inguinal space, is a kind of slit, opening between the superior borders of both walls and closed by the peritoneum which rests against its borders. It is filled with subperitoneal cellular tissue which is continuous with that of the interstice. This slit extends from the insertion of the prepubic tendon to the external quarter of the crural arch, with a length of 15 to 18 centimeters about, and following an oblique direction outward and upward.

At the internal angle of the interstice, the bottom is separated from the entrance or external inguinal ring only by the thickness of the prepubic tendon. But at the external angle the distance separating the inferior from the superior opening is much greater. It appears evident from this that the inguinal tract increases in depth from its internal to its external angle. Towards the former, where the inguinal canal is naturally formed in the normal, entire horse, as well as in those affected only with

ptorchidy, the depth is only from 5 to 6 centimeters, while, increasing from inward, outwardly, on account of the obliquity upward which has been acquired by the bottom, it easily measures 10 and 12 centimeters at the external angle. This is a peculiarity worth noticing, since from this fact arises one of the most important of the indications of the operating steps, viz., the perforation of the inguinal interstice. The indication is this:

The external inguinal ring forming the entrance to the inguinal interstice having been exposed by the division of the scrotum and dartos, and by the laceration of the conjunctive tissue beneath, the hand is carried upon this ring, whose internal commissure and posterior pillar are easily found. Introduced into the ring it is then pushed into the interstice, outward and upward toward the flank, in order to pass by the side of the external angle of this interstice without breaking the small resistance it offers.

By this mode a part much nearer the sub lumbar region is reached than could be otherwise without going beyond the external quarter of the crural arch than when the hand is further from the internal angle or prepubic tendons.

Numerous post mortem examinations of pseudo operations made upon dead animals have shown that the hand pushing forward the fleshy portion of the small oblique muscle and lacerating the cellular tissue of the inguinal tract, reaches the peritoneum and lacerate it at about 18 centimeters from the linea alba, or more commonly from 12 to 15 centimeters.

The hand then drawn, the fleshy portion of the small oblique contracts upon itself, comes to lie against the crural arch, and closes the interstice. Again, when the animal is in a standing posture, the opening of the peritoneum being in a portion of the abdominal wall, the intestines have no tendency to engage into it; a double result which will in a majority of cases prevent peritonitis and hernia. And again, through this peritoneal laceration, it will always be an easy task to bring the testicle out of the abdomen in order to remove it.

If, on the contrary, the bottom of the interstice has been lacerated near the median line, the artificial peritoneal opening

would in this condition render hernia certain. And again, if the suspensory cord should be too short it might be impossible to bring the organ out of the abdomen to amputate it.

2. DISPOSITION OF THE TESTICLES.—A. *Abdominal Cryptorchidy*.—While the testicles remain in the abdomen, they are suspended to quite a large peritoneal frænum, starting from the lumbar region, and composed of two layers, between which run the blood vessels and efferent canal. According to the length of this frænum the organs are floating at various heights immediately in front of the pelvis, at times against the anterior border of the pubis, and again lower, on the inferior abdominal wall, and again above it. It is at the entrance of the pelvis, against the anterior border of the pubis, or a little above, and more outwardly in the direction of the flank, that they are ordinarily situated.

They are small, soft, flabby, without vaginal covering, and have only a thin tunica albuginea, which allows the projecting of the numerous sinuosities of the venous blood-vessels which run on their surface, and give them a very peculiar ruguous aspect. Their size may vary from that of a pigeon's egg, or of a walnut, or that of a hen's egg; seldom larger.

The epididymis annexed to it is greatly elongated, and is separated from the testicle; the globus minor or posterior extremity, often constituting a soft, oblong and very moveable mass which hangs lower than the principal organ and is readily detected with the hand. We have seen in cryptorchid animals, an abdominal testicle reduced to the size of a very small nut, but with a very well developed epididymis, the globus minor of which was hanging as far down as the inferior inguinal ring, where it could be felt through the scrotum, while the testicle was in the abdomen.

In some cases of incomplete abdominal criptorchidy, there is a rudiment of vaginal sheath measuring from one to three centimeters in depth. Its cavity is thus occupied by the testicle; or by the epididymis, the testicle floating above it; and some times, according to Degive, only by a portion of the gubernaculum testis.

B. *Inguinal Criptorchidy*.—In this form there is always a

beginning of the migration of the testicular apparatus. Ordinarily, the testicle has entered the inguinal interstice, pushing the peritoneum before itself; which thus forms its vaginal sheath, and carrying the epididymis and efferent canal. Some cause has interfered with its entire descent and it has stopped before reaching the external inguinal ring, or partly engaged in it, more seldom after going beyond it. In some cases, the epididymis and the efferent canal alone have come down in the vaginal sheath, while the testicle has been retained higher up in the interstice, or even in the abdomen.

The testicles which are in the inguinal canal, exceptionally larger than those remaining in the abdomen, are generally, like those, small and soft. They are always surrounded by a vaginal sheath which becomes more and more nearly complete according to the degree of their descent.

They may be felt by scrotal examination, whether the animal is on his feet or lying down. But, in many cases, it is impossible to feel them. However, so long as there is a beginning of migration, after dividing the scrotum and dartos, and introducing the hand in the opening formed by the external inguinal ring, the fingers will always be able to secure the testicle or the epididymis, whether one or the other is engaged in the inguinal canal. Indeed, migration takes place toward the internal angle of the interstice, that is, when its depth is not more than from 5 to 7 centimeters, and the atrophied testicle or its epididymis is no more than 3 or 4 centimeters in diameter. When the testicles have passed the external inguinal ring, without being visible externally, they are as large and firm as the normal testicles hanging in the envelopes, and then, there is really no cryptorchidism.

GENERAL CONSIDERATIONS RELATIVE TO THE INDICATIONS OF THE OPERATION AND ITS CHANCES OF SUCCESS—PRECAUTIONS TO BE TAKEN.
—PREPARATION OF THE SUBJECT.

Before beginning the castration of a cryptorchid horse, it is indispensable to ascertain the seat of the abnormality (if right, left or double) and as much as possible its form, whether abdominal or inguinal.

The form is at times very hard to positively make out, and it may be difficult to say whether it is abdominal or inguinal. At any rate while it is better to make it out if possible, it is not indispensable, as in both cases the first stage of the operation (incision of the scrotum and dartos, with laceration of the cellular tissue underneath) are the same, and when they are completed, the position of the organ is then very easily ascertained.

Unless the case requires it, it is prudent to wait until the cryptorchid has reached his third year before operating; earlier than that age it is to be feared than the introduction of the hand into the inguinal tract may be dangerous on account of the incomplete development of the parts. And again, sooner than that one would lose the possible advantage of a later spontaneous descent of the organ. After adult age, animals can be operated upon without inconvenience, even at an advanced age.

The influence of the season of the year is neither more nor less an indifferent consideration than in any other equally serious operation of the same nature. Spring and fall are the best time to do it. Of course, the animal should be in good health and properly prepared.

This preparation consists in a relaxing mode of feeding for six or eight days in order to empty the digestive canal as completely as possible, and avoid the danger of a too severe febrile reaction.

Mr. Degive suggests a daily administration for eight days of one ounce of tinct. of arnica, in a single dose in the morning in about a pint of cold water. To this he attributes the frequent and often complete absence of fever after the surgical manipulations.

Like Mr. Degive, the author, before his first operations, employed tinct. of arnica, but since abandoning its use he has obtained equally good results.

The animal with an empty stomach is thrown down, in preference, on the side opposite to that on which the cryptorchidy exists, and the corresponding posterior leg is fixed as for ordinary castration. The patient must be in the dorsal position as

as possible, and must be secured in the safest manner practicable.

The washing of the sheath is a good measure. Anæsthesia ought to be employed, as much to relieve the patient from pain to facilitate the manipulations of the surgeon.

If the kind of cryptorchidy has not been detected while the animal was standing, it often becomes easier to do so when he is down and well secured. The instruments necessary are: Scissors, convex bistoury, forceps, tenaculum, clamps, ligatures or raseur, as the case may be. Oakum, needles and quill sutures ought to be always ready.

OPERATION.

Method by the perforation of the inguinal interstice.—This is divided into two parts. The first, which is the same in both kinds of cryptorchidy, has for its object to expose the external inguinal ring, and to allow the surgeon to discover whether the testicle has descended to the groin, or if it still remains in the abdomen. The second contemplates the prehension and ablation of the testicle; the means for effecting these objects vary considerably in the two kinds of castration.

FIRST PART.

This includes two steps. *First*, Incision of the scrotum and the dartos, and *secondly*, the laceration of the sub-dartoid layers.

A.—*Incision of the scrotum and dartos.*—At a point corresponding exactly to the scrotal cul de sac, the operator makes a transversal fold of the skin, which is raised and stretched, and cut through with the scalpel perpendicularly, dividing at once the scrotum and the dartos. The incision is longitudinal, measuring about 15 centimeters in length, and is made a little more forward than backward. If the division of the dartos has not been made by the first stroke of the knife, it is carefully enlarged, avoiding the large divisions of the external pudic veins, which run immediately under the skin, close to the median line.

B.—*Laceration of the Sub-Dartoid Tissue.*—The cellular meshes under the dartos, more abundant and condensed in cryptorchid animals than the others, cover the inguinal ring. They

must be carefully separated in order to expose this ring entirely, or to expose the vaginal sheath, as in the rare cases of inguinal cryptorchidism in which the testicles have come down to the lower part of the interstice. To do this, while an assistant separates the edges of the scrotal wound, the operator lacerates the layer underneath with his fingers, guiding himself by the internal commissure of the inguinal ring; that is to say, the point of insertion of the prepubic tendon, to the anterior border of the pubis, or by the testicle, when it is felt under the cellular tissue.

Bands resisting to the fingers are divided with the scissors, the use of the bistoury being contra-indicated on account of the blood vessels.

SECOND PART.

This differs in abdominal and inguinal cryptorchidism.

1ST.—INGUINAL CRYPTORCHIDISM.

Comprising two steps:—Prehension and ablation of the testicle.

A.—*Prehension*.—Two conditions may here present themselves. Either the testicle may be down on a level with the external inguinal ring, or it may be concealed higher up in the inguinal canal, or it may have remained in the abdomen, while only a portion of the epididymis is down in the groin. In the first case, the laceration of the layers of sub-dartois cellular tissue has exposed the organ; and then an easy isolation finishes the operation. Or, in the second case, the external inguinal canal, having been well dissected by the laceration of the cellular tissue meshes, two or three fingers are introduced in it, and soon the organ is felt. The testicle and epididymis are then drawn out by careful pulling until they are out of the external ring of the canal.

Bearing in mind the anatomical peculiarities already referred to, it will be easily understood that if the testicle is engaged in the interstice, the fingers will readily recognize it through the external ring. But it may happen that it is situated so high up that the fingers are too short to reach it; in this case the vaginal sheath being carefully raised with the forceps or a sharp tenaculum and opened, the testicle will at once descend until it can be easily reached and secured.

B.—*Ablation of the testicle.*—This can be effected by means similar to those used in ordinary castration, but we will not examine their comparative value until we enter upon the subject of abdominal cryptorchidism.

We have always used Chassaignac's ecraseur, which we have used for both the covered and the uncovered operation. In the covered operation the chain is applied directly on the vaginal sheath covering the cord. In the uncovered operation, the sheath is first opened sufficiently to allow the full exit of the testicle. Both processes are equally good, with the exception that the second is alone applicable when the testicle is situated so high up in the canal that it cannot be brought out covered, with its peritoneal envelope.

The organ being removed, the animal is allowed to get up and placed under the same care and treatment which are employed in the case of the horse castrated in the normal way. Hemorrhage is not to be feared since, if it takes place, the tampon held in place by sutures will soon overcome it.

(*To be continued.*)

REPORT OF THE COMMITTEE ON DISEASES OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION.

PROF. A. LIAUTARD, *Chairman.*

Mr. President and Gentlemen :

In the form of a very concise pamphlet, prepared by our excellent Secretary, we have been favored with a list of officers and a catalogue of the membership of the United States Veterinary Medical Association, and we have received the information that, omitting from the count those who have been elected to the honorary class, the total membership of this national representative of the veterinary profession in the United States is comprehended in the modest figures of *one hundred and thirty-four*. This statement reveals the fact that of the entire number of veterinarians in the country but one out of every eight of our professional

comrades has so far found his way clear to enter into organized association with this body of his collaborators.

Included in the pamphlet are the names and addresses of the nineteen State Secretaries who have been nominated by our President with the authorization of the Association.

The pamphlet includes a complete list of the various committees of the Association, with their membership, from which we learn that five members compose our Committee on Diseases quite well distributed throughout the land, in respect to the matter of residence. With committees so numerically strong in membership, and the aid of this list of State Secretaries, and especially with so complete and efficient a Committee on Diseases you will necessarily anticipate on this anniversary meeting of our Association, (the *twenty-third*, I believe) a report from me as chairman of this committee, which should be complete and satisfactory. But the result of such an anticipation can be none other than disappointment, when you come to realize the meagerness of the information I must be content to lay before you.

It is but a few weeks, I believe, since the distribution of this pamphlet of our Secretary was accomplished, and it is hardly probable, therefore, in respect to those who were most interested in knowing the positions which had been assigned to them, to make the proper and necessary preparation by obtaining in due season the information from others, or acquiring it for themselves, which must constitute the material for such reports as it is proper to lay before such a body as this. However this may be, and whether different results would have followed any other condition of things, we do not venture to say.

The chairman of the Committee on Diseases had four gentlemen with whom to co-operate, and to whom he could and did apply for aid. There were also nineteen State Secretaries, and the one hundred and thirty-four members of the Association upon which they (the five) could call in an appeal for interesting information and scientific facts and suggestions. These were all subject to our appeal; we could ask each and all of them to contribute to the common stock of veterinarian experience and science. I have done what I could, and here is the result in a communication

from one member of the committee. It is quite concise, and reads as follows:

Dear Doctor :

"Yours at hand; I gave you the only printed matter we have in relation to contagious diseases, but at present glanders is quite prevalent here in the eastern part of the State, and so far as my knowledge goes the only disease excepting tuberculosis that we have to any extent."

This is very little for a report, but with your permission, I think we can probably use it as a text, or stepping stone, for some remarks which in any case would be becoming in your Committee on Diseases; and so long as we are deprived of the pleasure of reporting any new and interesting cases of inflammatory, sporadic, or surgical diseases that may have occurred in the practice of our friends through the country, I will improve the opportunity to call your attention to a few contagious affections which are prevailing in the United States, and which at all times deserve the attention of all veterinarians. The diseases upon which I desire to make a few remarks are contagious pleuro-pneumonia, tuberculosis, anthrax, glanders, hog cholera and rabies. It is not my intention in these remarks to refer especially to the symptoms, lesions, or treatment of these diseases. They are all familiar topics to you. I shall consider, merely, some few special points connected with these, and such as are of *actual* interest to practical men. *Contagious pleuro-pneumonia* has been a very interesting subject for the past few years, and the last scene is no doubt watched as attentively as the first which appeared some years ago. The last striking fact relating to this disease is the attempt which is now in progress to stamp it out of the country. Laws have been passed, money has been appropriated, and the Commissioner of Agriculture has advised the Bureau of Animal Industry to proceed with the work. The inspection, quarantine, and compensation for the animals which have been destroyed, as well as disinfection, are the measures which are strictly laid down in the rules and regulations issued from Washington, and all will no doubt meet with general approval. Even inoculation has found recognition at the hands of the Chief of the

Bureau of Animal Industry, and is now allowed under special excellent rules, which still, however, have a slight odor of the former dislike of this official to that measure. It is important to know, however, that the work, as carried out at present, consists only in killing the diseased animals. It is not necessary for us to say how we regret that half-way measure, and our fears that this attempt will not be even as successful as that of General Patrick's commission. But that is the law!!!

If contagious pleuro-pneumonia is attracting, as it indeed deserves, the attention of our official veterinarians, we must not ignore the fact that there is another disease amongst our cattle which is prevailing also quite extensively, but to what extent is yet unknown. I refer to tuberculosis. It is reported from almost every State, and is a great deal more serious and dangerous an affection than pleuro-pneumonia, at least from some points of view, and on that account we cannot very well afford to ignore its presence in our herds.

The experience of the outbreaks in Maine some time ago, in New York recently, and in New Jersey and elsewhere, which were brought under the keen observation of our friends Bailey, Coates, Michener and others, and which have proved so costly to the owners of the diseased animals, may be but the forerunners of others more serious, which might by their extent endanger considerably several branches of our dairy trade. It is a cause of great regret that through the organization of this Association as it is, more information of the existence of tuberculosis has not been obtained for this occasion.

ANTHRAX in its various forms, idiopathic and symptomatic, has again, as it generally does, made its appearance in various States, and for the last few months reports of isolated outbreaks are coming to us from Arkansas to New York. Indeed, there is information from the former that the disease "is decimating herds rapidly, and that it is extensively spreading."

Is it not time once for all for veterinarians on this side of the water to make up their minds to apply to these forms of disease that form of treatment that is the only proper one in all contagious diseases, and that is prophylactic treatment? Is it not time

er us to accept and put in practice the vaccination which is now recognized all over the world as the proper treatment? We can allow one animal out of a herd to die with anthrax fever, black leg, or glossanthrax, but we ought not to allow the recurrence of the same when we have at our disposal the vaccine of Chauveau and Cornevin, without saying anything of that of Pasteur's. This vaccination is not a thing of which the people of this country are ignorant, nor do they seem to object to it. On the contrary, a communication from Illinois states that "many farmers and ranchmen are vaccinating their calves against black leg," though the vaccine matter is rather peculiar, being made of sulphur, *assafoetida* and turpentine, which is placed under the skin. This attempt with the inquiry made, "Is there anything better that can be used?" shows that the introduction of vaccination against anthrax could readily be made in districts infected with that disease.

GLANDERS.—It is unnecessary to say that glanders exists throughout the country or that all the agricultural papers have weekly or monthly reports of the outbreaks. Here it is one that has been allowed to spread "in spite of the efforts of the health authorities," while in another State it is the report that a "glandered horse has been abandoned on the road and been allowed to communicate his disease until he has succumbed to it."

Mr. President, our Association, it seems to me, has a duty to perform in connection with the existence of this disease. How is it to be discharged? What is the true nature of this duty I am scarcely prepared to say. It ought to be defined, discussed and decided by us and the conclusion arrived at brought to the attention of the proper authorities. There are, I believe, in connection with this disease, two important facts which might form the basis of our inquiries. The first is the importance of a proper *declaration*, a measure which we all certainly appreciate and approve, but which again is often ignored. The second is the deficiency which exists in the law concerning glanders in some of the States. While Illinois is provided with well regulated and we believe well enforced laws, Connecticut has none. While in the former the recognition of the disease by one veterinarian (ap-

pointed by the State authorities) means death, in Connecticut the diagnosis made by one, or even by several, but denied by another veterinarian, will bestow on the infected animal a lease of its life and liberty, by which he can spread his disease with impunity, and quite indefinitely.

HOG CHOLERA.—In this, the old history repeats itself. Large outbreaks, great mortality, enormous loss of money and comparatively, no way to fight against it; the old story over again. For a long time I have been advocating the introduction into this country of the prophylaxy adopted in Europe, viz: inoculation. Fairly tested experiments by Drs. Salmon, Billings, Gertl and myself, have however, proved that what I expected from that treatment was not realized here. Pasteur vaccine matter is of no effect in our hog cholera, and this is due to the simple fact that our swine scourge is a different malady from the disease known as such on the continent. The recent investigations of the Bureau of Animal Industry, and principally of Dr. Salmon, have proved this interesting fact. But we believe that it yet remains to be shown whether it is similiar to another contagious disease of swine, that which prevails in Germany, or if it is a special affection, of American origin.

RABIES has so largely occupied the attention of the world this year, and so many cases of that disease, either real or fantastic and illusory, have been recorded, that it would scarcely be proper to close these remarks without a few words on the subject.

“Pasteurization,” the new word adopted for the preventive treatment of rabies, may never enter into veterinary practice, though if vaccine matter were readily obtainable the treatment would undoubtedly be the one indicated for an animal, horse, cattle or dog, or any other, in fact, that might have been bitten by a well confirmed rabid animal. But if this pasteurization is not likely to enter into our arsenal, there is a fact, resulting from the labors of Pasteur, that we must not ignore, and that is the cerebral inoculation upon a healthy animal with a portion of medulla taken from suspected animals—a simple operation which is the most scientific and only means of diagnosis in doubtful rabid cases. I need not say that careful readings

all the experiments of Pasteur on the subject will readily convince you that the conclusions arrived at by him are positively correct, and you can easily confirm them yourselves with a little attention and careful manipulation. The regular manner in which the symptoms make their appearance, the regular duration of time which they will require to run their course and bring on the fatal termination, all of which have been made over and over again in thousands of cases, in almost every part of the globe; all of these testify to the great value of the operation as a means of diagnosis in the hands of the veterinarian.

In these remarks I have several times spoken of Pasteur and his modes of vaccination in various diseases. In this, I may be accused, as indeed I have already been, of acting from a motive of national partiality and prejudice in favor of a fellow countryman. I am willing to accept the accusation, and while I shall still be proud of the charge, it seems to me that I shall not any the less have done my duty towards this country if I succeed in introducing pasteurization and its humanitarian benefits to the fullest extent of their practical value.

AMERICAN VETERINARY COLLEGE.

HOSPITAL RECORDS.

CARIES AND REMOVAL OF THE THIRD UPPER MOLAR TOOTH
SUPPURATION IN THE NASAL TURBINATED BONE—TREPANA-
TION—RECOVERY.

BY JAMES A. WALRATH, D.V.S., House Surgeon.

On the 19th of August a brown gelding was admitted to the hospital with the following history: Toward the latter end of April the owner's attention was called to a slight discharge taking place from the right nostril, of a whitish character, which was observed to be more abundant when the head was depressed. Thinking it to be nothing more than a simple nasal catarrh he concluded that no treatment was necessary, and kept the animal at work, supposing that the discharge would cease spontaneously.

After a delay of some weeks without any perceptible change, by the advice of friends, sent the horse to the country for a

run at grass. Here he remained, as the owner supposed doing well, until word was received from the pasture owner, announcing that the services of two practitioners had been called to see the animal, and that there was a question in dispute between them as to the nature of the disease with which the animal was suffering. One maintained that he was affected with glanders and ought to be destroyed, while the other one contended it was not and that the discharge was due to other causes which were not in the least contagious.

Immediately following this the horse was sent back to the city, and a short time after his arrival was brought to the hospital for examination.

At this time, the discharge was not very abundant, being flaky in character and having a peculiarly bad odor. A large swelling was visible on the right side of the face, involving the nasal bone, especially in its superior portion, percussion dullness was well marked not alone over the swelling, but over nearly the whole extent of that bone.

The animal roared when moved, respiration not being performed without considerable difficulty. Examination of the nasal cavity with a reflector showed the mucous membrane to be of a leaden color, and the turbinated bone to be enlarged and quite prominent, even at the inferior extremity, which was readily noticed by lifting up the wing of the nostril. Placing the hand in the mouth of the same side, the third molar tooth of the upper jaw was found to be decayed and the cavity partially filled with undigested food.

After proper preparation of the animal by dieting, he was thrown down, and while under the influence of chloral, the diseased tooth was extracted, by removal in two pieces. The bulging nasal bone was then trephined, and about two ounces of cheesy pus taken from the sinus of the turbinated bone with a spoon probe. He was then allowed to get up and the sinus thoroughly cleansed with lukewarm water, from a small pipe which was inserted through the opening made by the trephine, the water that entered being allowed to escape through the nostrils, carrying with it small pieces of detached pus.

This treatment was kept up twice daily until scarcely any discharge was noticed, after which the irrigations were not as frequent, taking place but once a day, and later on still rarer, the opening in the meantime being kept open with a short firm bit of oakum, and the granulations around the edge cauterized frequently with nitrate of silver.

After the discharge had ceased the oakum was removed from the opening and the edges allowed to unite, union taking place very rapidly.

The tooth cavity was kept as clean as possible after the traction, by washing out with water the foreign matters that had collected. The function of respiration which had been mechanically interfered with, was, after the operation, performed with ease, and at the end of the fourth week he was discharged. He has been seen since several times and found in perfect condition, doing his daily work.

COMPOUND COMMINUTED FRACTURE OF THE FORE ARM IN AN ELEPHANT.

BY THE SAME.

While acrobatic feats may be performed with impunity by man, all will acknowledge that when tight-rope walking is attempted by an animal of such size as the elephant even the balancing pole is scarcely sufficient to insure perfect equilibrium.

A young trick elephant about seven years of age, and weighing somewhat over two thousand pounds, which had been on exhibition for some time in Tarrytown as a tight-rope walker, was noticed after one of his daily performances to be somewhat lame in the near fore leg. Suspecting that he had strained himself by a false step the managers concluded that if not very profitable, it might be wise to cease the training to which he was subjected, and give the animal a few weeks rest. But contrary to their expectations, after resting a few days he began to grow worse, and was found one morning by his keeper with his leg swollen and hanging powerless. On attempting to move him the leg bent backwards and refused to support even the slightest amount of weight. Dr. Liautard was now summoned by telegraph, and upon examination found the

animal to be suffering with a compound and comminuted fracture of the fore arm, both bones being broken. An unfavorable prognosis was given. He was, however, by the consent of Mr. Conklin, Superintendant of the Central Park Menagera, allowed to be transported to New York to consider the propriety of treatment. This was evidently useless. No matter how quiet the animal might have been kept, reduction was impossible, application of splints impracticable, the leg was swollen and sensitive, the external wound through which the bones protruded was discharging a thin sanious pus very offensive, which, attracting swarms of flies, added much to the animal's suffering, and in the presence of all these conditions it was decided to destroy him, and for that purpose he was led out of his cage, secured by chains, and four rifle balls discharged into that portion of his cranium situated behind the base of the ear.

The post mortem appearances of the bones of the leg were as follows: The ulna (the largest bone in the fore arm in the elephant) was fractured transversely across its lower third, about five inches above the articulation. The radius presented a comminuted fracture, also of its lower third, having been broken into several pieces. Several large abscesses were found around the seat of the fracture, and when opened were observed to communicate directly with the fractured end of the bones, which were considerably necrosed and rapidly undergoing disintegration. The large tendons passing over this portion of the leg were nearly all softened, and some were seen partially separated from their bony attachments.

EXPERIMENTAL PATHOLOGY.

ON THE TRANSMISSIBILITY OF TUBERCULOSIS THROUGH FOOD, AND UPON THE ATTENUATION OF THE PATHOGENIC ACTION OF THE BACILLI OF TUBERCULOSIS BY PUTREFACTION.

BY FISHER.*

Fisher has experimented on rabbits which were kept isolated in cages, under the best hygienic conditions and which at the beginning of the experiments were in perfect health. They were

* Archiv fur experimentelle Pathologie and Pharmak.

d with portions of fresh lung, obtained from other rabbits which had developed general tuberculosis, from their inoculation, a few weeks previous, with tuberculosis matter in the anterior chamber of the eye.

The pieces of lungs were cut into smaller fragments, and kept in distilled water or a solution of chloride of sodium and then crushed in a mortar. This crushed mass was filtered and the liquid obtained, containing a certain number of bacilli, was mixed with milk or water, which was given to the animals to drink.

A single dose of from 3 to 8 cubic centimetres of the mixture gave rise after six or eight weeks to the development of typical tuberculations of the mucous membrane of the mesenteric glands and of the liver. The spleen, kidneys, mesentery, peritoneum and pleura were in all cases found healthy. On the intestinal mucous membrane, ulcerations sometimes appeared, resembling very much those found in the intestines of phthisis patients.

In most of the animals there was a tuberculation of the sub-maxillary and cervical glands, though there were no ulcerations either upon the buccal or the pharyngeal membranes. Once, a single tubercular ulcer was found on one of the amygdals, with a tubercular eruption upon the tongue. Altogether these experiments give another proof of the transmissibility of tuberculosis through the food, and again they confirm those of Falk, upon the resistance which the bacillus of tuberculosis offers to digestive secretions.

Like Falk, Fisher has observed that where alimentary masses, infected with the Koch bacilli, have been previously exposed to putrefaction, the virulent activity is diminished if not destroyed.

Fisher also remarks that, in his experiments, he has always used young tubercles, free from spores, but containing tubercular bacilli only, and therefore that he cannot agree with Wesener, who says that in the digestive canal, the spores alone preserve their virulent activity, while the bacilli have none. He also objects to the theory that normal gastric juice destroys the bacilli of tuberculosis.

And again, from the fact that Wesener has produced tuberculosis in animals injected with the sputa of phthisis in the

intestines, it cannot be concluded that putrefaction diminishes the virulency of the bacilli, as the sputa of phthisis contains other pathogenic organisms, capable of stimulating the formation of inflammatory foci resembling more or less those of tuberculosis.—*Revue des Sciences Medicales*.

EXTRACTS FROM AGRICULTURAL PAPERS INTERESTING TO VETERINARIANS.

RED TAPE—DEALINGS WITH CONTAGIOUS DISEASES—"A MODERN INSTANCE."

To the Gazette :

On the 19th of August I wrote to the chief of the Bureau of Animal Industry calling his attention to the outbreak of pleuro-pneumonia at Quebec quarantine station, and suggested that immediate steps should be taken to prevent cattle that had been in that station with the infected cattle from being imported into the United States, and mentioning a lot of polled Angus cattle of Mr. Dye, of Miami Co., O., as probably in that category. To this letter Dr. Salmon answered August 25, saying that it was received during his absence, added, "we have taken steps to secure information in regard to the danger, if any, to be apprehended from the presence of pleuro-pneumonia in the Quebec quarantine station. My impression is that the disease was recognized immediately on the arrival of the infected herd and that no cattle have left the station since that time. I hope to have definite information in regard to this in a few days, and if there is any reason for quarantining any herds which have come through that station to the United States I will notify the proper State authorities at once in order that this may be done."

And now, on the 6th day of September, I have received from the Bureau of Animal Industry the following:

Hon. T. C. Jones, Chairman of the Ohio State Board of Live Stock Commissioners, Delaware, O.: I have received information from the Inspector of Stock for the Dominion of Canada that the infected cattle were admitted to quarantine on June 24,

that the herd belonged to Mr. C. R. C. Bye did not leave the quarantine station until July 26. These cattle were consequently in the quarantine station in the neighborhood of the infected cattle for over a month. I would, therefore, respectfully recommend that they be held under supervision until the expiration of ninety days from the time they were discharged from the Quebec quarantine station.

D. E. SALMON, Chief of Bureau.

There was another lot of Angus cattle belonging to Geary Bros., Canada, that came over in the same ship with those of Mr. Bye, and released from quarantine at the same time, and were advertised to be sold at the Ohio State Fair last week, which the officials at Washington seemed to have had no knowledge of; and although the permission given to sell these cattle on the Fair grounds was withdrawn as soon as the managers learned of the outbreak at Quebec, the cattle were nevertheless shipped to Ohio a week before the fair. Fortunately we did not wait to be informed by the Washington officials, but had the cattle placed under official supervision as soon as they arrived, and ordered them to be kept in quarantine, isolated from all other stock, for a period of ninety days from the time they left the Quebec yards, so that there would not be the slightest danger of the infection spreading if an outbreak should occur amongst these cattle, which we regard as most improbable.

In the meantime I had written to the Commissioner of Agriculture, and to the Secretary of the Treasury, calling attention to the matter, and urging that the permission given by the Treasury Department to import cattle from Canada should be withdrawn, and to-day I have a letter from Acting Secretary Fairchild, stating "that the Secretary of State has been requested to investigate the matter, and to inform this (Treasury) Department at an early date, whether any contagious or infectious diseases prevail among the cattle in that country. Upon the receipt of such information the Department will communicate further with you upon the subject."

Now, it may be that all this circumlocution and consequent delay is necessary in the transaction of business at these departments, but I cannot understand why it should be.

The Secretary of the Treasury ought to be much better informed on the subject than the Secretary of State, because he has subordinates all along the Canadian border who could have informed him of the importation of the cattle from the Quebec quarantine.

The law of Congress prohibits the importation of cattle from British Provinces, but gives the Secretary of the Treasury the power to permit such importations, when in his opinion it will subserve the public interest, under such restrictions and limitations as he may prescribe. Some two or three years ago the Department issued an order allowing the free importation of such cattle without restriction, and if they were imported for breeding purposes, as they are generally claimed to be, they come in free of duty, while our cattle cannot be taken into Canada at all without a quarantine of ninety days after landing. Why did not the Treasury Department withdraw its permission immediately upon learning of the outbreak of pleuro-pneumonia at Quebec? If this had been done it would probably have saved us the trouble and expense of looking after the two lots above mentioned. It certainly would have detained the Geary cattle in Canada, for they were shipped only ten days ago.

T. C. JONES.

DEALING WITH HOG CHOLERA IN CONNECTICUT.

A disease made its appearance in a pen of 80 swine belonging to L. D. Rockwell, of Bloomfield, Conn., on August 8. Being called professionally to attend the affected animals, I found after making autopsies that the disease was hog cholera, otherwise known as "swine plague." On August 11 I reported such to be the case to the Commissioner of Contagious Diseases of Animals, and on August 14 the chairman, Hon. E. H. Hyde, of Stafford, visited the affected herd and placed them under strict quarantine. The Commissioners, including E. H. Hyde, of Stafford, and Dr. J. W. Alsop, of Middletown, again visited these swine, in company with myself, on August 18, and after making numerous autopsies on the cadavers of those which have recently died and on some that were killed for our benefit, they became satisfied a

the nature of the disease, and ordered the entire number to be raised according to the law, then destroyed and buried, the premises thoroughly disinfected, and no other swine allowed on premises for the period of three months. The law provides when the Commissioners deem it necessary for the public good, they may order any animals afflicted with contagious diseases to be destroyed and paid for by the State, after being appraised at their actual value at time of appraisal, which is made by three disinterested parties.

It is supposed that these swine became infected by contagion conveyed by the medium of sheep brought from the west. Mr. McKwell, who is a butcher, is constantly bringing sheep from the Western States, and it is at least probable that they are in this way the carriers of the contagion.—*J. E. Gardner, D. V.S., Connecticut Cattle Commission, in New England Homestead.*

SOCIETY MEETINGS.

ANNUAL MEETING OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION.

The annual meeting of the United States Veterinary Medical Association held at the Rossmore Hotel, September 21st, at 10 a. m. President Dr. McLean in the chair. Censors present, Drs. Miller, Dixon and Field. The meeting appointed Drs. Dougherty and Harrison to act as censors. The only business coming before the comitia minora was examination of candidates for admission to membership. All applicants for admission to the Association were favorably recommended with one exception.

Upon roll call it was found that about forty members were present. The minutes of annual and semi-annual meetings were read and adopted.

Admission of members being next in order, the following gentlemen were named members of the Association; W. S. Kooker, A. S. Leatherman, J. Faust, C. H. Lowe, Paul Paquin, Jas. W. Sallade, Wm. Miles, Theo. Birdsall, John Ogle, J. H. Jacobus, E. R. Forbes, V. T. Atkinson, G. L. Warner, Alex. Marshall, E. Waters, F. J. Mustoe, E. B. Weber.

After admitting and welcoming newly elected members, Dr. Dougherty recommended for membership W. H. Martenet of Baltimore, Ind.; Dr. Coates proposed Jas. A. Walrath of N. Y., and Robt. C. Jones, Port. Jefferson, L. I.; Dr. Harrison proposed C. Saunders Breed, D. D. Lee, K. Winslow and E. C. Kett, of Harvard University; Dr. Ross proposed Thos. Bland, of Conn., Dr. Dry proposed Geo. G. Van Mater, of Brooklyn and W. E. Cuff, of New York; Secy. proposed Wm. Rose, of Staten Island, T. S. Butler, of Ohio, John Company, U. S. Calvary and Dr. Harris, of New York.

Election of officers for ensuing year resulted as follows : Pres., A. Liautard; Vice-Pres., Wm. Zuill; Treas. Jas. L. Robertson; Secy., Ch. B. Michener; Board of Censors, C. P. Lyman, R. S. Huidekoper, D. J. Dixon, L. McLean, S. S. Field, E. C. Ross, Fred. H. Osgood.

Dr. McLean, on retiring from the chair, regretted that individual members took so little interest in the welfare of the Association, and did so little to advance the profession. Dr. Liautard spoke briefly on assuming the chair. The Treasurer's report showed the funds of the Association amounted to about seven hundred dollars.

After considerable discussion and unnecessary personal remarks it was decided to accept the recommendation of the comitia minora, and allow the name Dr. Bridge to come up before the semi-annual meeting in March.

The committee to secure uniform standard of examinations by the different colleges was continued. Diseases committee reported through its chairman Prof. Liautard. The report will appear in the columns of the REVIEW.

The committee appointed to secure better recognition for Army Veterinarians was also continued. The Association, by motion of Dr. Robertson, voted \$100.00 towards erecting a monument in honor of Henry Bouley. After a short intermission, the Secretary read two essays that had been presented to the Association for its prize.

One of these receiving a large majority of all votes cast, was awarded the prize. The essay was on the subject of Parturient Apoplexy, and was written by T. S. Butler, V.S., of Ohio.

It was decided in the future to grant this prize to any person writing the best paper on any subject relating to veterinary medicine; that such papers be printed in AMERICAN VETERINARY REVIEW and distributed to members of the Association and further that all communications competing for prizes be read at the regular meeting of this society.

The committee on education and intelligence was empowered to spend no more than \$150.00 in the prosecution of its labors. After general discussion, the Association adjourned to the banquet room and spent a most pleasant evening. The semi-annual meeting in March, '87, will be called by order of Board of Censors in some of the Eastern States.

C. B. MICHENER, V.S., Sec'y.

OHIO STATE VETERINARY MEDICAL ASSOCIATION.

The 4th semi-annual meeting took place at Columbus, Ohio, Sept. 1. Owing to the absence of the President, Dr. F. B. Coldon, the chair was occupied by Dr. W. R. Howe, of Dayton, who called the meeting to order with a few well applied remarks. About 20 members were present from different parts of the State. The minutes of the previous meeting being read and approved, several letters were read by the Secretary expressing the regrets of several members at being unable to be present and also letters from Professors Liautard of N. Y. and McEchran of Montreal, thanking the Association for the honor they had conferred upon them by making them honorary members.

The following gentlemen being vouched for by the Board of Censors, were then elected members, viz: E. R. Barnett, V.S., Akron, Ohio; T. E. Anderson

, Carey, Ohio; I. S. Butler, V.S., Chillicothe, Ohio., graduate of the Ohio Veterinary College, and C. S. Elliott, D.V.S., of Greenville, Ohio; I. Kent, D.V.S., of Cadiz, Ohio, graduate of the American Veterinary College.

In the afternoon session, the chair called for a report from the committee on contagious diseases. Owing to the absence of their chairman no official report was made, but several members present took the liberty to state what cases had come under their observation since our last meeting. Dr. W. E. Wight, of Delaware, spoke of having met with one case of glanders since our last meeting. Dr. Rock, of Columbus, reported cases of glanders that are in quarantine near the

Dr. Smith, of Pleasant Hill, reported two cases of genuine glanders. Dr. [unclear], of Cleveland, reported cases which had come under his observation since our last meeting. Dr. J. S. Butler reported cases and thought the law was a little defective in this particular, as it gives parties a beautiful chance to dispose of a horse even after he is informed that he suffers from glanders, before the proper authorities instruct him to either quarantine or destroy the animal.

The chair called for essays and papers, but none were forthcoming although they had been promised according to the Secretary's report, both parties having been excused in due time. Dr. Detmars, of Columbus, was to have read a paper on glanders, Dr. Yonkerman, of Cleveland, on medical jurisprudence. Both gentlemen were absent and no excuse or apology was sent to the Association for their absence. Several members were inclined to censure Drs. Detmars and Yonkerman for neglecting the Association in that manner. A motion was made and passed by a unanimous vote instructing the Corresponding Secretary to write both gentlemen expressing the Association's views on the subject. As the Association demands respect from each one of her members, it is altogether likely that some action will be taken at the annual meeting unless a satisfactory explanation is given by a gentleman for not being present to read his paper or writing an excuse. A suggestion was made by Dr. Smith that alternates be appointed in the future to read papers; that would always insure us of a sufficient number of essays. This suggestion was thought wise and will be adopted in the future.

The chair appointed a committee consisting of Drs. Newton, Butler and [unclear], to draw up resolutions of respect to the memory of Dr. L. B. Chase, of [unclear], O., who had been removed by death since our last meeting. Dr. Fairbank spoke on the subject of castration and regretted very much that many of the graduates of veterinary colleges did not undertake the operation of castrating animals, an operation which is simple but thorough. They do not have sufficient confidence in themselves, having had no practical instruction. This work belongs to the veterinary surgeon and no graduate should in his opinion leave a college without being able to operate as well as the farmers who are traveling about the country operating. It is in his opinion a disgrace to the profession to have to turn any part of surgery to farmers and humbugs who do not understand the anatomy of the parts at all. Still they operate instead of qualified veterinary surgeons. It is to be hoped in the future that the different demonstrators on surgery at the different veterinary colleges will make a bold effort to practically demonstrate to their class how to operate, and not be compelled to bring in farmers and butchers to instruct their classes. Dr. Newton followed by giving an excel-

lent description of the operation and how successful he had been, and how willing people were to pay well for the operation properly performed. Dr. Cotton related his experience after having castrated some eighty head with but few loss. The Dr. regards the operation as a simple one and recommends all qualified veterinary surgeons to make an effort. Dr. J. S. Butler spoke of his success and stated that he did not hesitate to operate, and thought that a great deal depended upon the after care of the patient for making a recovery. Dr. Devors, who has a famous reputation as a castrator, spoke of his system of casting and securing them before the operation, and in the majority of cases there was but little danger. A lengthy communication was read from McComb, Ohio, from one I. Strouse exposing some shameful work done by traveling castrators. In one case he spoke of the operator removing the bladder and killing the horse; in other cases two out of three proved fatal, and still they warranted the animals.

Dr. James Hammill, of New York, was then introduced and spoke at some length on glanders and on the State law in New York regulating contagious diseases.

Dr. Stuart, of Cleveland, Ohio, was also introduced and spoke briefly of castration, and stated, although he was not a member of the Association, he believed that the Ohio Association outnumbered any other State Veterinary Association, and thought much good was derived by her work to the profession.

Some important business relating to unprofessional conduct and breach of ethics were then considered, resulting in some persons being expelled from the Association.

Dr. Newton then spoke of his mode of operation for hernia and the subject was fairly discussed by several members of the Association.

After much discussion it was decided to hold the annual meeting at Piquette on the second Tuesday in January, 1887. Dr. Butler promised to have there a number of interesting surgical cases to be operated by the members present and will—a kind of surgical tournament.

After adjournment a very complicated case of double champignon was exhibited by Dr. Hillark, who requested Dr. Fair to operate. Dr. F. having wisely declined on conservative surgical grounds, Dr. Howe operated. The operation was successful, but the patient died a short time after.

W. C. FAIR, Cor. Secretary.

PENNSYLVANIA STATE MEDICAL ASSOCIATION.

The semi-annual meeting of the Pennsylvania State Veterinary Medical Association was held in the Supreme Court room at Harrisburg, on Tuesday September 7, 1886. At 11 A. M., in the absence of the President, the meeting was called to order by Dr. J. C. Michener, Vice-President. The Recording Secretary being absent, Dr. Chas. I. Goentner was appointed pro tem.

On roll call the following members were found to be present: Drs. T. R. Rayner, Chas. Schaufler, J. C. Fly, W. Horace Hoskins, W. L. Zuill, J. R. Hart, James B. Rayner, H. T. George, W. W. Custer, N. Rectenwald, J. C. Michener, M. J. Collins, T. S. Lippincott, R. S. Huidekoper, A. H. Lovette, J. W. B. Fretz and W. E. Reinhart.

The minutes of the last meeting were read and adopted. Several reports made for members unable to be present, after which a recess was taken. The afternoon session was called to order by the President, Dr. J. W. de.

Dr. Hoskins, by special permission, offered an amendment to the by-laws, *passed*, That any officer of this Association absenting himself from two consecutive meetings shall be subjected to a fine of five dollars.

Essays now being the order, Dr. R. S. Huidekoper, of Philadelphia, read an instructive treatise on glanders and farcy, offering it as an initiatory step toward passing a legislative act to cover these diseases, and giving the necessary power to veterinarians to destroy them when met with.

The next essay was one by Dr. J. Curtis Michener, of Colmar, on the subject of retroversion of the vagina and uterus. The subject was handled in a suggestive and practical manner, and both essays were followed by discussion.

The Treasurer's report showed a balance of \$61.90 on hand.

On motion the meeting adjourned to meet in Philadelphia in March, 1887.

Reported for the REVIEW by

W. HORACE HOSKINS.

NEW JERSEY STATE VETERINARY SOCIETY.

The eighth regular meeting of the Veterinary Medical Association of New Jersey was held at Van Woert's Hotel, Long Branch, Thursday, August 1886.

The President, Dr. Wm. B. E. Miller, of Camden, occupied the chair and called the meeting to order at 11 A. M., when the roll was called by the Secretary. Nineteen members answered to their names.

Mr. A. E. Vreeland, of Jersey City, a student at the American Veterinary College of New York, and John Kehoe, V.S., of Lyndhurst, an applicant for membership, were also present.

The Secretary read the minutes of the Morristown meeting, which were read as read.

The reports of the Secretary and Treasurer were presented and accepted.

Dr. Lowe read letters from Professor A. Liautard, of the American Veterinary College, Dr. E. M. Hunt, Secretary of the New Jersey State Board of Agriculture, Dr. F. S. Billings and others, in which they expressed a sincere desire for the welfare of the Society and regretted not being able to be present.

The amendment to the by-laws, in relation to delinquent members, proposed by Dr. Miller at the Morristown meeting, was adopted. The names of eight members were stricken from the roll for non-payment of dues.

The Board of Censors met and examined John Kehoe, V.S., of Lyndhurst. The President of the Society called for their report, but the decision was withheld, the chairman of the Board stating that they were not prepared to report. The Board of Censors reconsidered the matter in the afternoon, when Mr. Kehoe was regularly admitted to membership.

The following gentlemen were proposed for membership:

T. S. Cole, of Millville, by Dr. Rogers; R. W. Carter, of Jobstown, by Dr.

Lowe; Ed. Chambon, of Jersey City, by Dr. Arrowsmith; W. A. McKint of Morristown, by Dr. Durlan; R. E. Stamrood, of Freehold, by Dr. Sanfor

President Miller delivered an excellent address on veterinary legislation showing how important it is that the Legislature should grant the profession still greater protection than has heretofore been accorded it by the act under which the Association is incorporated. A committee of five, with Drs. Miller and Lowe members ex-officio, was appointed to look after the interests of the Society at Trenton, and endeavor to bring about this much-desired object.

The members of the Society had a lengthy discussion over the practice now quite common with insurance companies of employing their own veterinarians to look after horses that are insured by them. This method was condemned and a resolution was adopted not to treat horses that are insured in these companies to meet such veterinary surgeons in consultation.

The system of agricultural and other colleges having veterinary departments which are filled by but one professor graduating young men as veterinary surgeons, was generally condemned. It was the opinion of the members present that justice could not possibly be done to veterinary students at such colleges and that it was an imposition upon the student, the profession and the public in general.

The next regular meeting will be held at Trenton in December.

WM. HEBBERT LOWE, D.V.S., Secretary

AMERICAN SUBSCRIPTIONS TO THE MONUMENT TO H. BOULEY.

A. Liautard.....	\$20.
J. C. Meyer, jr.....	5.
Keystone Veterinary Association.....	20.
United States Veterinary Medical Association.....	100.
	<hr/> 145.

CORRESPONDENCE.

ON THE USE OF IODINE VAPORIZATION.

ROYAL VETERINARY COLLEGE, EDINBURGH. }
AUGUST, 18th, 1886. }

The Editor of the "American Veterinary Review: "

SIR.—I observe in the current issue of your journal some editorial remarks on the use of iodine in the treatment of glanders.

I have never administered this agent by intra-tracheal injection nor should I have even dreamed of doing so, and taking into account its irritant properties I should consider such a proceeding

justifiable, and, seeing that it can be so readily utilized and brought into contact with every part of the air-surface of the lungs by inhalation, unnecessary; indeed, I am of the opinion that owing to its great diffusive and penetrating properties it would permeate a large portion of the parenchymas, as well as the air spaces and cells of the lungs.

Like the authors in the report to which you draw attention, I have every reason for believing that glanders is never cured, and that in so-called cases of cure the visible local manifestations of the disease are alone overcome, while the deeper (lung especially) lesions remain, and that it is only a matter of time—the length being regulated by local circumstances—for the symptoms to again develop in the external surface with increased virulence. While saying this, however, I must also say, (and this is my main reason for writing this letter) that if there is one system more calculated than another to cure glanders it is *iodization by inhalation*, and a case which came under my observation last year strongly confirmed my faith in the curative value of iodine in such cases.

In September, 1885, I was requested to examine a pony in whose near fore leg a peculiar swelling had suddenly presented itself. On examination I found an inflammatory swelling having unusual characters involving the cutaneous cellular tissue around and above the anterior surface of the nose, and when examining this I observed a little adhesive discharge about the pony's nostrils and tumefaction of the sub-maxillary lymphatic glands; on directing the owner's attention to this he said, "Oh! yes, I know about that, he has had a bad cold, and has been in a certain veterinary establishment for some time, and discharged cured, or said to be cured."

I made a searching examination for confirmatory evidence of the suspicion which had crept into my mind that I had to deal with a case of glanders, but failed to discover any. I nevertheless took all necessary precautions and treated the case as one of nasal gleet—for the first week or two with mineral astringents and tonics—but the discharge becoming more copious I commenced the use of *iodine vaporization*—a system of treatment, I may observe, that I seldom or never find to fail in arresting un-

complicated nasal gleet—with the result that in a short time the discharge ceased and the pituitary membrane assumed a more healthy condition, the enlarged glands also becoming softer and smaller. Not feeling satisfied with the progress of the case I requested Prof. McFadyean to inoculate a guinea pig with some of the nasal discharge, of which I gave him a supply. The result of the inoculation confirmed my suspicions, and the pony was slaughtered. The post mortem examination revealed pulmonary and systemic glanders lesions, but what was of more importance, I found several very extensive glanders cicatrices in the nasal membrane (high up in the cavities), but no recent ulceration, and no collection of pus; neither were there any bronchial lesions. Iodine vaporization should be more extensively used for such affections than it is, and also as a nasal and bronchial parasiticide, but glanders should be treated—*never*.

I am yours faithfully,

THOMAS WALLEY.

A CORRECTION.

DAYTON, Ohio, September 13th, 1886.

Editor Review:

I notice in the September number of the REVIEW, in Dr Fair's report of the Ohio State Veterinary Medical Association, the following sentence:

"Dr. J. C. Meyer, jr., read a very able paper on the different methods of casting horses, and showed some very good specimens of fractured vertebrae, the result of careless casting and confining of horses." Dr. Meyer did read a very good paper, and had taken the trouble to prepare and take to the meeting such specimens. He also had the moral courage to write up a case of a fatal accident (which any practitioner may have). Although I do not think any wrong was meant, I do think it very unjust for Dr. Fair or any other man to accuse Dr. Meyer of carelessness in casting horses when he had not seen the operation, neither was it the verdict of the members present.

WM. R. HOWE, V.S.

POSITION WANTED.

GRANVILLE, Ohio, ——— 1886.

ur Editor :

Wanted by a young veterinary surgeon, of good moral character, a position as assistant, or overseer of a breeding establishment.

J. T. JAMES,
P. O. Box 72.

PRACTICE OFFERED FOR SALE.

MARSHALL, Mo., ——— 1886.

itor American Review :

DEAR SIR.—Please publish the following advertisement in your journal, and send me copy of same :

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OBITUARY.

DR. CHASE.

COLUMBUS, Ohio, September 1st, 1886.

Resolutions passed by the Ohio State Veterinary Medical Association upon the death of our esteemed member Dr. CHASE, of Berlin, Ohio :

“ *Whereas*, It has pleased Almighty God to remove from our midst our much esteemed member, Dr. L. B. Chase, of Berlin, Ohio, and

“ *Whereas*, We feel his loss to our profession keenly, as he was a prominent member and one of our Board of Censors; therefore it is

“ *Resolved*, That we tender our heartfelt sympathies to the widow and family of the deceased.

“*Resolved*, That we leave them in the hands of Providence who only can give comfort in such times of affliction. It is also

“*Resolved*, That a copy of these resolutions be sent to the family, to the VETERINARY REVIEW, and be spread upon the minutes of the Association.”

W. C. FAIR,
J. S. BUTLER,
J. V. NEWTON,

Committee.

NEWS AND SUNDRIES.

PASTEUR INSTITUTE.—The Paris *Conseil municipal* has ceded to the Society of the *Institute Pasteur* for ninety-nine years the ground upon which the institute is built. The following official statement has just been made: The whole number of persons treated by Pasteur is 1,656 (of these, 15 have died); 1,009 of these were French (3 of them died); 182, including 50 bitten by rabid wolves, were Russians (3 of these bitten by dogs, and 8 by wolves, have died); 20 were from Roumania, with 1 death; of the others, 59 were from England, 17 from Austria, 74 from Algeria, 18 from America, 2 from Brazil, 42 from Belgium, 58 from Spain, 7 from Greece, 8 from Holland, 25 from Hungary, 105 from Italy, 20 from Portugal, 2 from Turkey, and 2 from Switzerland (of all these, not one has as yet died; the total mortality, therefore, is less than one per cent.,—a most striking commentary upon the views of those who declare Pasteur’s methods a failure).—*Science*.

INOCULATION OF HYDROPHOBIA.—With the virus taken from the spinal cord of a dog, which had died of hydrophobia in the Stockholm Veterinary Institute, three dogs were inoculated by Pasteur’s method. To render it more certain, the meninges were chosen for the seat of operation. The dogs were carefully selected as being totally free from bites by other dogs which might have been suffering from rabies. The inoculation wounds healed after two days, and the dogs seemed quite healthy and lively. The sixteenth day after the operation two of them showed symptoms

abies, and the third followed two days later. The first two had fully developed rabies sixty days after the first symptoms had appeared. To save the third dog unnecessary suffering was killed as soon as he developed decided symptoms of rabies.—*Lancet*.

PNEUMONIA AND HOG CHOLERA.—Hogs are suffering from pneumonia and hog cholera in the lower end of York County, Pa. Hundreds of them have died, almost every farmer for miles around having lost some of his stock—one farmer reports that he has lost all his hogs by the disease. A number of cattle are suffering with pleuropneumonia.

HOG CHOLERA has caused the death of hundreds of hogs in the southern townships of Adams County, Ind. The larger farmers have lost nearly all their big lots by the disease. Some of the farmers attribute the cause to the extreme drouth, while others say that the disease was caused by feeding unripe corn. The cholera has not appeared elsewhere in the county, but the loss is very heavy.

PASTEUR'S METHOD OF COMBATING RABIES.—Inoculation against rabies have, so to speak, obtained their right of citizenship in Vienna as well as in Paris, through Professor von Frisch and Dr. Ullmann. These gentlemen had betaken themselves to M. Pasteur's laboratory at Paris for a close study of the methods made known by the latter investigator in his anti-rabic inoculations. First, Professor von Frisch made a communication on his own researches respecting this subject to the Imperial-Royal Society of Physicians, which was received with much applause by the audience, and the same was the case with the last communication before the same society, by Dr. Ullmann, an operator at Professor Albert's clinic. The latter remarked, in the course of his speech, that, in order to disprove the suggestion that rabies might possibly be produced by the preventive inoculations, he and four other physicians had inoculated themselves with the rabic virus derived from mad dogs, though they had not been bitten by such without bad consequences. The injections caused no pain. On the first and second days he had felt somewhat weak, and, beginning with the sixth inoculation, he had noticed on himself an irritation of a slight degree, with severe itching. He further

stated that he had brought with him from M. Pasteur's laboratory a rabbit of the one hundred and fourteenth remove (*passage*) which had been inoculated with rabic virus, and that, with M. Pasteur's consent, he was prepared to make preservative inoculations on persons who had been bitten by mad dogs, at Professor Albert's clinic. At the same meeting Professor von Frisch showed three rabbits which had been inoculated with parts of the spinal cord taken from rabid animals. He had already inoculated a large series of animals after Pasteur's method, and had always observed the same appearances: From eleven to fifteen days after the trephining and the injection of the rabic virus, the animal remained quite healthy; afterward they ceased to eat, and turned on their sides in the cage, presenting the appearance of general paralysis. On being touched with a stick, however, they were very sensitive and were immediately seized with cramps and convulsions; four or five days later they died. At the post-mortem examinations he had never observed an abscess of the brain; the cerebral wound healed without any reaction. He had now received from M. Pasteur's laboratory a rabbit inoculated with the *virus fixe*, and announced that he would begin his researches concerning the attenuation of the virus.—*From N. Y. Medical Journal*

AN OLD REMEDY AGAINST HYDROPHOBIA.—It has recently come to light that the State of New York, in 1806, paid to John M. Crous a thousand dollars for a remedy against hydrophobia which he considered infallible. The measure was advocated by DeWitt Clinton and Chancellor Kent. This remedy consisted of one ounce of the jaw-bone of a dog, burned and pulverized; the false tongue of a newly foaled colt, dried and pulverized; and "a scruple of verdigreas," raised on the surface of old copper by laying it in moist earth. The warrant of the Comptroller on which the money was paid, and the receipt of Crous, are on file with other State papers at Albany.—*Medical Record*.

SKEPTICISM ABOUT HYDROPHOBIA.—"We have been somewhat surprised," says the *Neurological Review*, "to notice the readiness with which so many condemn the method of M. Pasteur for arresting or preventing hydrophobia. Some have even gone so far as to intimate doubts as to the reality of any such disease. It

ears to us, to say the least, curious how it is possible for any to consider rabid animals, to witness the symptoms they present, the progress of the disease, and finally their death, and doubt whether it actually exists. It is to us almost as much of a surprise to find persons doubting whether there is, or may be, such a disease as hydrophobia in the human species, especially as communicated by the bites of rabid animals. If it is not well established that such a disease as rabies really exists, then, for ourselves, we hardly know what can be considered established. And we have been to a less degree surprised at the readiness with which M. Pasteur and his proposed method of arresting or preventing hydrophobia in man have been condemned, too often by those who have given but little attention either to the character of the man himself or upon course of experimentation upon which views are based."—*New York Medical Journal*.

DISCOVERY OF THE PATHOGENIC ORGANISM OF THE SWINE-PLAGUE.—The extreme difficulties of reaching certainty in bacteriological researches must be apparent to anyone who has followed the record of its work in the past ten years. An excellent illustration is found in the study which has been made of the virus of hog-cholera (swine-plague, infectious pneumo-enteritis). Dr. D. E. Salmon gives some account of this in a recent issue of *The Sanitarian*. Hog-cholera costs this country some twenty-five millions of dollars yearly, and hence deserves attention from economists as well as men of science. It is an infectious disease spreading epidemically through herds. In 1876 Dr. Klein described a micrococcus which he found in the tissues of animals suffering from the disease. In 1878 he found, cultivated, and inoculated a bacillus, and thought it pathogenic. Recently, however, he has attributed the disease to a different bacillus occurring in the form of short rods. In 1880 Dr. Salmon found and cultivated a micrococcus which he believed, until recently, to be the essential virus of swine-plague. In 1883 M. Pasteur announced that the *rouget* of France, believed to be identical with our swine-plague, was caused by a dumb-bell-shaped microbion. This germ, he said, could be attenuated and made to act as a vaccine. We are told, however, by Dr. Salmon, that the

vaccine which Pasteur now sells for *rouget* contains a fine bacillus which grows in cultures into filaments of considerable length. Inoculations with this vaccine, according to Dr. Salmon, do not cause a disease identical with our swine-plague.

Dr. Salmon states that he has at last found a microbe which seems to be very certainly the cause of swine-plague. The organism is rather a bacterium than bacillus; it is very irritant, and produces all the symptoms and lesions of the disease. It was found in the tissues of hogs in the early stage of the disease, and it is believed that previous errors have been due to the fact that in the late stages various septic and other organisms develop.—*Medical Record*.

FLACHERIE IN INSECTS.—Professor Forbes publishes in the Bulletin of the Illinois State Laboratory of Natural History, vol. ii, pp. 257-321, an account of the continuation of the interesting studies on the contagious diseases of insects begun by him in 1883. In this account he describes at length a common and highly destructive disease of the European cabbage-worm (*Pieris rapæ*). This disease he believes to be caused by a spherical micrococcus, of which he gives two excellent microphotographs. More complete and conclusive studies were made of a disease of the silkworm, which was apparently that known as jaundice. Of especial interest is the fact that he was able to produce this disease in cabbage-worms by moistening their food with culture fluids containing the bacteria of this disease derived from silkworms. These experiments seem to us to be of the highest importance. If this or some other bacterium could be used against the cotton-worm, how much more effectual it might be than the poisons which are now used! These are liable to be washed away by the first rain, and will not multiply themselves. Professor Forbes also reports at length on a disease attacking two species of *datana* in his breeding-cages. This disease he is positive is the well-known *flacherie* of the silkworm.—*Science*.

A SENSATIONAL REPORT comes from Texas of the damage done by a recent hail-storm in Lincoln county, which, it is stated, killed 12,000 sheep, and also some cattle.

AMERICAN VETERINARY REVIEW.

EDITED AND PUBLISHED BY

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AND OTHER VETERINARIANS.

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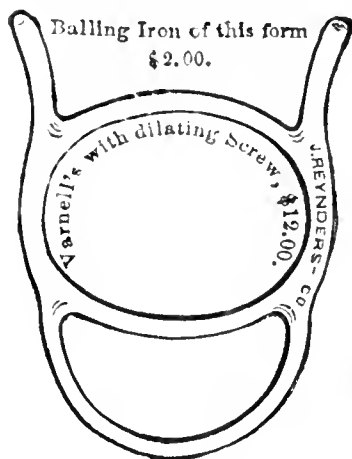
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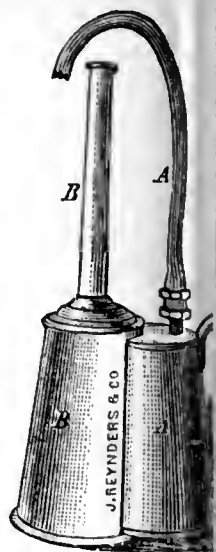
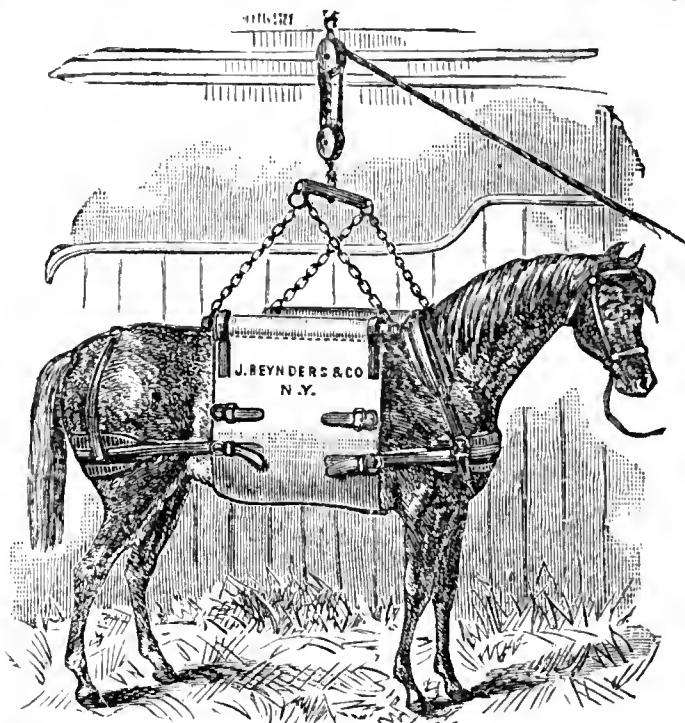
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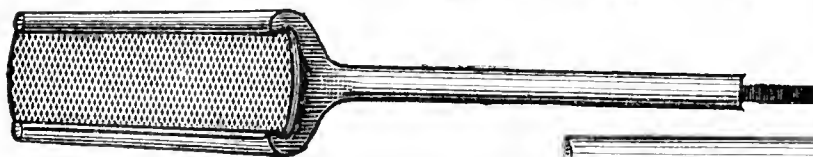
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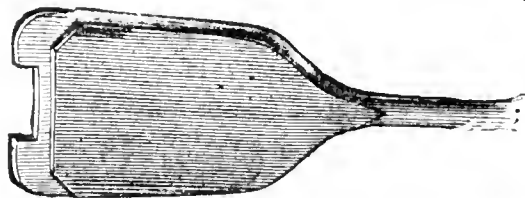
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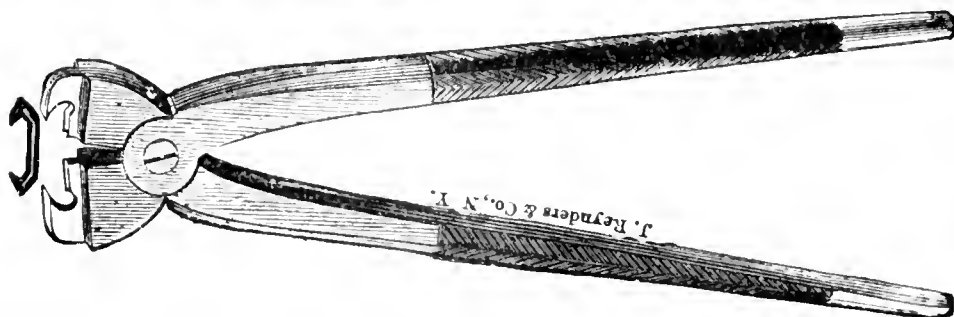
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AMERICAN VETERINARY REVIEW,

NOVEMBER, 1886.

EDITORIAL.

VETERINARY COLLEGES—their opening—classes larger than usual—more requirements asked of the students—more thorough education, and why—the reason given by the *National Live Stock Journal*—more expert knowledge wanted—the medical profession crowded—physicians ought to perfect their studies in comparative medicine, but not from the books alone. CONTAGIOUS PLEURO-PNEUMONIA in the West—its outbreak in Illinois—difficulties encountered in the work of stamping it out—the laws imperfect—conflicts all over—Dr. Gadsden's appointment—his experience on the disease—the objection from *Turf, Field and Farm*—singular examination and more singular conclusions—are recovered cases, so called, dangerous or not?—important extract from the report of Chief Veterinary Inspector Stephenson, M.R.C.V.S. MEETINGS OF VETERINARIANS IN CHICAGO—a new organization—the profession will be glad to hear from it. MASSACHUSETTS—shepherds on watching for contagious diseases—the order of the State Cattle Commission—declaration or giving notice, the principal measure of veterinary sanitary police. VETERINARY COLLEGES OF ENGLAND—recognition awarded to American graduates—admission granted without examination and with privileges of two years' studies—Dr. Mitchell, the prize graduate of the class of 1884-85 of the American Veterinary College, goes to Edinburgh for a post graduate course. THE NEW YORK STATE VETERINARY SOCIETY—alterations in the by-laws—meetings changed from monthly to quarterly—why—is the society moribund—if dying she will leave a good record in the law in New York regulating veterinary practice. ACUTE MASTOIDITIS—interesting and instructive paper by Dr. G. Stockwell—one of the most complete papers on the subject ever written. JOURNAL OF COMPARATIVE MEDICINE—changes in.

VETERINARY COLLEGES.—The month of October again witnesses the advent of the working season in the veterinary colleges, and students and teachers are once more in harness and "tackled up" for their respective tasks. The classes have been formed, and the elections of their *alma maters* have been made by the students.

Their choice in this important step has of course been guided by a variety of considerations. With one the argument of "low fees," with the unpleasant exigencies to be inferred from the phrase, has been potent. Another has found a ruling motive in the prospect of a shorter term of study, with the flattering anticipation of an earlier realization of successful practice at the end of the curriculum. With another, neither the low fee nor the easy and early graduation argument has been potential, and he has joined himself to the institution in which in his judgment he can be best taught and trained for the honorable and useful pursuit he has chosen.

The general outlook is favorable for the schools, and therefore for the students, and we may reasonably anticipate a good perhaps an exceptionally good record when a review shall be in order at the close of the year. As a general result thus far, we are justified in reporting good classes in all, larger classes than in previous years, and this ought to mean a better professional education, as the fruit of more earnest endeavors by the teachers to impart and the learners to acquire fuller knowledge. The time has gone by where a limited—often a minimum—stock of knowledge satisfied the ambition of the student and the conscience of the teacher. The graduate of twenty, fifteen and even ten years ago, unless he has kept himself well posted and has been careful to avoid becoming rusty, might, if again passing through the green room, find that the examination had become more faithful and the questions harder and more comprehensive and more of them than he can recall from his past experience, and if it should occur to him to inquire into the matter with a view to the discovery of the reason of the change, he would probably find his answer furnished ready to hand in the words employed as the heading of an editorial article, from which we make some extracts, in the *National Live Stock Journal*, which reads, "MORE EXPERT KNOWLEDGE NEEDED." It is clearly to comply with this requirement that the demand comes from the public that our young veterinarians should seek more and receive a better educational training. Twenty years ago, when veterinary colleges began to be organized, the public was unprepared for the requirements now looked for, and the

profession was, if not quite ignored, at least denied a place among learned and responsible callings. But all this is changed, we need say for the better. The *Live Stock Journal* in the editorial referred to says:

For every half dozen establishments where horses are bred for speeding, there should be an educated and in every way a competent surgeon, to pass upon the personnel of growing colts, selecting those that are formed to stand training, assigning others to work they were formed to endure. The ailments of body and mind in a lot of growing young stock, especially such as are under training, are liable to be numerous, and the highest skill is required to do justice to animals of value. The same truths apply to cattle. In the fitting of herds for exhibition or sale, it happens, unfortunately, that some of the most expensive and valuable in the herd are, in one fitting, under the direction of an owner and herdsman more ambitious than wise, stripped of their value for the want of a thorough review of their capabilities, and tendency toward unfortunate results while fitting. A competent veterinary surgeon could pass judgment upon the tendency of females, as to whether this would be toward abortion, upon feeding up to the show limit. A great deal of blundering is done in feeding up, and especially by continuing the excited state during the year. The physiological effects of this are not sufficiently understood by owners and herdsman, hence, for this reason, skilled aid should be more generally available than now.

How wisely this reads, and what force of argument dwells in these words, which remind the public of truths which have been so long ignored, and which even now may not carry the weight which they are entitled, we need not say. But is the proposition contained in the same article, suggesting the best method of securing the end in view, viz., "more expert knowledge," well conceived or practicable?

The provision for treating human ailments is altogether beyond the requirements. Perhaps there is no calling more completely overcrowded. But with vast sums invested in live stock, there are but a meagre number of those who are prepared to diagnose the ailments of domestic animals and treat them intelligently. One-third of the graduates of medicine now before the public would add the leading veterinary works to their libraries, looking up the anatomy of the horse and cow—this would be a very simple task, because the tissues are the same, and named in the one case as in the other, the muscles being in pairs as in the human subject, and named after them—apply their physiology, the doctrine of digestion, circulation, generation, pathology and the use and action of remedies, as they have learned these things in what would naturally be called the *higher school*,* they would find a field before them to a great extent unoccupied, certainly not overcrowded. The graduate in human medicine would have at once a position accorded to him in the new field, while, in the present state of things, the opportunities for preferment, considering the extent of the competition, are meagre indeed.

* Italics are ours.

We have great respect for the authority of the *Journal*, one of our best live stock publications, but we feel quite justified by long experience in saying that it is not out of human physicians that veterinary experts can be made, or that they may be converted into expert veterinarians by merely adding "leading veterinary works" to their libraries. The human as well as the veterinary physician may in the general principles of medical science have received a first-class professional education, but there are great differences between the two, and each requires its special teaching and special drilling before the qualifications of an expert can be mastered by either.

And the correctness of these statements has been often and undoubtedly proved by the existence and the various outbreaks of pleuro pneumonia which have disturbed our agricultural community for the last few months. Pleuro-pneumonia contagiosa is very readily recognised at the post mortem, but ask the young graduate who has seen but few cases of the disease, and whose skill in auscultation and percussion are still deficient, if he has encountered no difficulties of diagnosis, of treatment and of prognosis, and experienced no disappointments in results, in confronting his living cases, and note what his answer, if honestly given, will be. If such is the case with him, what must it be with the man whose skill is exclusively acquired by the study of the "leading books," even the best. No. If physicians want to practice veterinary medicine let them secure the proper veterinary education. They may then help to fill out the ranks of the veterinarian which certainly are far from being thronged and not at all likely soon to be overcrowded.

CONTAGIOUS PLEURO-PNEUMONIA.—Western agricultural papers are full of interesting articles on the subject of contagious pleuro pneumonia, and the last outbreak at Chicago at the Union Stock Yards is a circumstance not by any means likely to quiet the anxiety which has been excited. The *Breeders' Gazette* says that "things will culminate in time, but the pleuro-pneumonia business in this city (Chicago) seems very slow about coming to a head. Patience must be cultivated; it is always in order. Doubtless there are many obstacles in the way. "Prompt and resolute

measures" have not been enforced from the start. Legislative action has interfered with the work of stamping out. The appraisal of losses, which is the principal agent of success, has been unsatisfactory. The capital required, the money granted to carry it on has not been sufficiently available, and while the entire staff of the Bureau of Animal Industry, with Dr. E. Salmon at its head, is hard at work, we can easily understand that the progress is slow. It is not yet time to find fault, and if it comes, and the fault is located, we are sure it will not be chargeable to neglect, carelessness or ignorance on the part of the veterinarians.

A valuable acquisition has been secured by the stock yards officials in obtaining the services of our friend, Dr. Gadsden. We have received a communication from him which we print in this number, which gives a very correct idea of the sort of advice he is likely to give in the stamping out of the disease.

Speaking of Dr. Gadsden's article, the veterinary editor of *Surf, Field and Farm*, referring to it, says:

Dr. Gadsden, of Philadelphia, a prominent veterinarian, sends us for publication an article contributed by himself to the Philadelphia *Practical Farmer*, October 16 inst., which we regret we have not the space to print. The article distills with strong points, and is well worth reading. We must, however, take exception to the statement that there is such great and imminent danger to be anticipated from what he is pleased to denominate "so-called cured cases" being allowed to mingle with healthy herds, notwithstanding he gives as his experience at this has in the past been the means of spreading the malady, and cites a number of strong names in the support of his theory. We are well aware that people, especially professionals, are prone to jump to conclusions arrived at without a proper consideration of the subject in question, and with all respect to the doctor and his supporters, we believe this to be a case of that kind. What we would like to ask the Doctor and the gentlemen he refers to is, has he or they ever conducted a process of experimentation to establish the fact of the contagious nature of such cases, or does he arrive at his conclusion by some other process? There are so many avenues by which a contagious disease may be propagated and disseminated, that one may readily be mistaken for another. We experimented, we believe, very carefully in this matter, to wit, destroyed "a so-called cured case" of two, four, and seven months standing, that is, after the normal functions had returned, and introduced a portion of the contents of each diseased animal into the system of twelve healthy bovines at different intervals and by different processes, without producing anything resembling contagious pleuro-pneumonia or its remotest symptoms. Prof. James Law also conducted a similar experimentation without, as we understand, any positive result.—*Vet. Ed.*

Therefore, in the estimation of the author of the article, the animals constituting the "*so-called cured cases*" of contagious pleuro-pneumonia are not dangerous, so far as the spreading of the disease is concerned. And his opinion is based on, what? *On the process of experimentation, which, perhaps, was not carried out by the supporters of the contrary opinion, but BY HIMSELF.* We agree with him; evidently, his experiments were not followed by any processes *producing anything* resembling contagious pleuro-pneumonia, or its remotest symptoms. But a little careful thought must lead to the conclusion that these experiments were of no value in the inquiry presented. Too many evidences exist which seem to prove this dangerous condition of "recovered cases." The following case recorded by Mr. Clement Stephenson F.R.C.V.S., proves the fact beyond a doubt.

VETERINARY REPORT FOR YEAR ENDING SEPTEMBER 30, 1885.

[COPY.]

To the Chairman and Gentlemen of the Executive Committee for Northumberland.

GENTLEMEN.—The work of the past year has been troublesome, disheartening and expensive. There have been six outbreaks of pleuro-pneumonia to contend with, in which a total of two hundred and five animals have been implicated.

The lot of cattle in which the disease first appeared was bought in April, 1884, and remained apparently healthy up to July in this year; the disease was then developed, and in so violent a form, that the first animal died on the seventh day. This rapid death, not usual in this disease, was explained by the post-mortem examination, which revealed the disease in two forms or stages, namely: recent acute disease, and old encysted cases. The latter had lain dormant for fifteen months. I have before pointed out the peculiarities and dangers of these old encysted cases, of which, during the year, I have found no less than nine, eight of which were in cattle brought from Ireland.

Encysted pleuro-pneumonia is found in those animals which from having been in infected herds, have contracted the disease, but in so light a form (only a small piece of the lung being affected) that apparent recovery has taken place; in fact, they may have been so slightly affected that little or no deviation from health may have been observed.

Lung tissue, when once invaded by this disease, never recovers its normal condition; it becomes enlarged, hardened, and impervious to air, and, in those apparent recoveries, the portion of lung affected is isolated and cut off from the remainder of the lung by a dense fibrous capsule, and it appears that so long as this imprisoned portion of dead lung remains firm and unbroken down, so long may the animal appear to be doing well. But the length of this, the firm quiescent stage, is as uncertain as the incubative one. A time comes when the im-

ned piece of dead lung breaks up and liquifies, and then the active stage of the disease is re-started.

(Signed.)

CLEMENT STEPHENSON, F.R.C.V.S.

Chief Veterinary Inspector for Northumberland.

To conclude, we cannot help believing that such assertions as one made by the well qualified veterinary editor of *Turf, Field and Farm*, are most unfortunate. There are already sufficient real difficulties in the way of the important work undertaken for the eradication of the disease from the country, without introducing others, without validity or value; which will not stand the test of careful inquiry; which have been proved erroneous, and which at best, if undoubtedly correct, would after all, only save the lives of few poor old broken down animals, useless in life, and worthless even after death. We have no hesitation in saying, as was said at the fourth international meeting, that these animals ought to be destroyed. The destruction of infected and contaminated animals is an essential measure in the execution of a sanitary protective policy.

VETERINARIANS IN CHICAGO.—The agitation arising from the prevalence of contagious diseases in the West has already led to the organization of various associations, with kindred objects, relating to the same subject. These associations have already held meetings, and during the month of November will have a large gathering, pursuant to the following call:

LINCOLN, NEB., October, 1886.

DEAR SIR.—The second annual meeting of State, Territorial and Government Veterinarians, of Live Stock Sanitary Commissions and Boards of Health, Representatives of Veterinary Colleges and Veterinary Associations, General Live Stock Agents of Railroads, and Editors of Live Stock and Agricultural Journals, will be held at the Grand Pacific Hotel, Chicago, Ill., November 15th, 16th and 17th, 1886.

Men of ability, eminent in their respective callings, will address the meeting on contagious animal diseases, the manner of their spread, and the means necessary to eradicate and control them, the necessity of adopting a uniform sanitary policy by the various States, veterinary sanitary legislation, both State and National, veterinary sanitary medicine, transportation of live stock, etc.

Constitution and by-laws for a permanent organization are now being prepared and will be offered for adoption.

Delegates are expected to be present from every State and Territory in the

Union, and it is believed that this year's meeting will prove most interesting well as profitable.

You are most respectfully urged to attend.

RUSH S. HUIDEKOPER, M.D., V.S.,
President.

*Dean of Veterinary Dept., University of
Pa., Philadelphia, Pa.*

J. GERTH, JR., D.V.S.,
Secretary

*Nebraska State Veterinarian
Lincoln, Neb.*

GEO. C. FAVILLE, B.V.M.,
Assistant Secretary
*Colorado State Veterinarian
Fort Collins, Colo.*

This organization was, we believe, organized last year, at one of the meetings of the Live Stock Association, and the work must have prepared (?) or accomplished during the last twelve months, must undoubtedly be of interest to the veterinarians of the country generally. But besides the meeting of this organization an invitation, emanating from the "Consolidated Cattle Growers Association of America," to attend the meeting appointed to be held in Chicago on the 16th and 17th of November, has been extended to the veterinary organizations of the country at large. Taking in consideration the importance of the subjects which are to be treated and discussed, and the weighty interests of the veterinary profession which are involved, the work of these meetings will be anxiously anticipated and carefully scrutinized.

MASSACHUSETTS SANITARY MEASURES.—Massachusetts has for many years been free from that contagious disease of cattle which threatens our Western herds, and, at the same time, maintains a careful watch against others from which there is a possibility of danger to her stock animals. We print a communication in our present number, from the State Cattle Commission, which may wisely be taken as an example of what ought to be done in every State in the Union. The entire letter is appropriated to the presentation of a single measure of sanitary medicine, to wit, the "declaration," or the "giving notice" of the presence, and the suspicion of the existence, of a contagious disease. This is well done. The existence of a disease of that nature, once known by the first case discovered, and the measures taken to dispose of it, are, after all, the essential means for the prevention of the invasion and spread of one of these scourges.

VETERINARY COLLEGES OF ENGLAND.—In one of our late issues, speaking of an attempt which was about to be made by the French veterinarians to obtain the enactment of a law regulating the profession in that country, we called the attention of our readers to the clause which we thought might be of interest to recent graduates in search of a post-graduate's education and of diploma from one of the French schools.

We have since obtained information from England, which we conceive may be yet more important to the graduates referred to from this country. The Catalogue of the new Veterinary College in Edinburgh states that "a student holding a Foreign or Colonial Veterinary Diploma shall be exempt from attendance on the Course of Lectures for the first two years, and from the Examinations at the end of those years, respectively."

According to this provision, attendance during only one session will be required from a graduate holding an American degree. Of course, the past history of "diploma mills," and the career of McClure, will be remembered by Principal Williams, and there is every reason to believe that the character of the diploma will be carefully investigated to insure the authenticity and genuineness of the parchments. Dr. Mitchell, who graduated second in the class of 1884-'85, and secured the prize offered by the American Veterinary College, is now in Scotland, and has matriculated at the new Veterinary College in Edinburgh. We believe he is the first American graduate who has been allowed to take advantage of the privileges referred to.

NEW YORK STATE VETERINARY SOCIETY.—We publish the report of the last meeting of the New York State Veterinary Society, held on the second Tuesday of October.

Amongst the important proceedings on that occasion was an alteration of the by-laws, by which the meetings, which since the foundation of the society in 1874, had been *regularly held monthly*, are to be hereafter held only *quarterly*.

The reasons for this action were not strongly presented, and no opposition was offered when the question came to a vote. What has decided this alteration of the by-laws is not worthy of inquiry. The question is settled, and whether this means death or

new life and vigor to the society is a point which will soon be decided. But whatever may be the result of this measure to the New York State Veterinary Society, its original constituent members will leave to her name a good record in the law which was passed last year regulating the practice of veterinary medicine in the State, thus striking the death blow to veterinary quackery in the State of New York.

CANINE MASTOIDITIS.—Our readers will find in our present number the first of a long article on this common disease of dogs. It is a very valuable addition to the pathology of canine diseases and one which has, so far as English literature is concerned, been but inadequately, and certainly very imperfectly, treated. A careful perusal of the article of Dr. Stockwell will prove very interesting and instructive.

JOURNAL OF COMPARATIVE MEDICINE.—We regret that the late arrival of this excellent paper does not allow us to give it the proper notice it deserves. Great changes have taken place in the editorial management; and while Dr. Conklin of N. Y. remains as one of the editors, the name of Dr. Billings, who has done so much for the journal, is now dropped from the staff. We find it replaced by that of the Dean of the Veterinary Department of the University of Pennsylvania, Dr. R. S. Huidekoper, M.D., with the prospective assistance of correspondents from every veterinary school of America, and some from Europe. The past of the *Journal* gives large promise of its future.

DR. GADSDEN'S APPOINTMENT.—The Union Stock Yards have asked that an expert veterinarian be stationed at the yards, and the telegraph announces that Dr. Gadsden, of Philadelphia, has been designated by the Governor for this service. Well, Dr. Gadsden is certainly a good veterinarian, but Sam Allerton, New Morris, or the editor of the *Chicago Journal* know so much more than anybody else about cattle diseases that the Stock Yards people should have asked to have one of these detailed.—*Breeders Gazette*.

ORIGINAL ARTICLES.

CANINE INFLAMMATORY MASTOID DISEASE !

BY G. ARCHIE STOCKWELL, M.D., F.Z.S.

Strange to say, in spite of the important fact that the canine stands high in the scale as an intellectual and sensual being; that his physiological and nervous functions are marvelously akin to those of man; that he is subject to like influences and causes in marked degree, even to the development of pure psychoses of reflex origin; comparatively few efforts have been made to exhibit the close relationship that exists, particularly in the development of morbid phenomena. Indeed, the prevalent impression appears to be that the dog is a "*natural animal*,"—whatever that may be intended to convey,—and therefore without special tendency to, or aptitude for, acquiring disease; a premise that is untrue of *any* creature, though domestication, or other change in modes of life, undoubtedly inculcate each their special train of evils.

Aside from *rabies*, there is, I believe, no disease of the canine nosology so completely at the mercy of ignorant speculation as the so-called "*canker*," a term that has no specific meaning more than "*spreading ulcer*," and generally accepted as a synonym for progressive malignant tissue degeneration. I am aware of no work devoted to comparative or special medicine that offers any pathological explanation of the malady, neither can I discover that any special attempt has been made to elucidate the problem. Indeed, the term appears merely as a make-shift to cover deficiencies of knowledge and education, for it is, I find, applied indiscriminately to a majority of the diseases of the canine auditory apparatus, external or internal, especially if accompanied by suppuration. This lack of knowledge may be attributed to two causes chiefly. 1. The superficial attention paid to diseases of the dog as compared with other domestic creatures deemed of more pecuniary and economic importance. 2. The imperfect character sustained by general and special medicine alike, neither of which can be deemed in any sense an

exact science! Again, comparative medicine suffers from the ignorance of the masses; in spite of our boasted civilization, an individual, no matter how illiterate or brainless, is held competent to administer to the ills of animality, (and even humanity), and there appears to be implanted within every member of the human race an inherent desire to dabble with "*physic*," exhibited in inverse ratio to the degree of intelligence.

The canine ear differs less from the human than might at first be imagined from comparison of external characteristics of both crania, consequently, under the supposition the latter may be more conveniently at hand, I select it for illustration. For all practical purposes, it is only necessary to remember that the mastoid process in the dog is situated higher up than in man when viewed in the same plane, a difficulty that may be overcome by lifting the posterior portion of the human *os temporis* to an angle of 25 degrees. With this understanding that the human crania is selected merely for illustration, and that the relations expressed are purely canine and referring to the larger animals, let us select the left temporal bone for convenience and definiteness.

Starting with the external opening of the ear we first observe an annular leaf of osseous material, developed in varying degree in different subjects and species, curved underneath, and cemented anteriorly to the *squamous* portion, and posteriorly to the *petrous* portion of the *os temporis*. Following the direction of the *meatus auditorius externus*, at its further extremity is encountered the drum or *membrana tympani*, which preserves the same general character and relations in all higher vertebrates save in the one factor of size. With a tendency downward and inward, and an inclination forward of about forty-five degrees, it presents the appearance of a firm, somewhat elastic, semi-transparent membrane, blocking the way to the *tympanum* or middle ear. Beyond is found an apartment of extreme shallowness (the middle ear) more lofty by one-half than the *meatus*, some three lines in depth, and eight and a-half in anteroposterior measurement. Midway between the floor and ceiling in the anterior wall, we find the opening leading downward and inward to the posterior pharynx—the *eustachian way*. Near the centre of the farther wall, opposite the drum, is the *promotory*

well defined by the lower turn of the *cochlea*, and above the *fenestra ovalis*, where terminates the polished system of minute levers and sound-transmitters, the *ossicles* (*malleus*, *incus*, *stapes*, and *os orbiculare*), that form a chain across the cavity connecting the *membrana tympani* with the *vestibule*. Passing through the *fenestra ovalis* to the internal ear, the opening of the *cochlea* and the *spiral way* appear, and beyond, at the back, the *semicircular canals*. Returning and examining the posterior wall of the *tympanum*, an opening is revealed leading backward and upward to the chamber over the external meatus, the *antrum mastoideum*, and beyond, backward and outward (more *downward* in man) the series of *pneumatic cells* or *mastoid spaces*, oftentimes many in number, perhaps but few, varying even in individuals of the same species. In most young creatures, especially the new born human, the *antrum mastoid* alone is found, the inner table of the bone being in an incomplete state of development, and the sense of hearing problematical, if not absolutely in abeyance.

Turning now to the central aspect of the *os temporis*, observe upon the inner wall of the mastoid the groove curving round upon the posterior portion of the petrous bone, that receives the *lateral sinus*. If an old skull is at hand, eroded from long burial, evidences of decay will most probably appear in the vicinity of this canal, which demonstrate how extremely frail is the osseous partition separating the *antrum mastoideum* from the middle lobe of the cerebrum, in spite of a polish that inculcates a deceiving appearance of hardness and solidity. In the undeveloped crania of young animals this partition is most superficial, not infrequently entirely wanting, which accounts for discharges from the ears occurring coincidently with convalescence from maladies having no definite connection with the auditory apparatus, as scarletina in children. Note also, in the groove of the lateral sinus a foramen, which transmits the *mastoid emissary vein* from without through the external surface of the mastoid, transversing the pneumatic spaces on its way to form a junction with the sinus! Again, I would call attention momentarily to the scalp surface of the mastoid, and to the thin delicate structure of the outer table of the bone directly over the cells or spaces!

The foregoing is fairly descriptive of the seat of mastoid diseases, or "canker;" but before proceeding further it may well to consider a few brief correlative facts:

Diseases of the auditory apparatus are commonly summed specifically and technically under the heads *otitis* and *otalgia*. The latter demands but passing notice since its proper province is to define simple neuralgic conditions only; it is a frequent concomitant of *otitis*, and symptomatic rather than specific. *Otitis*, however, is made to embrace many and varied forms of inflammation of diverse origins and localities, and may be more definitely divided into *otitis externa*, *o. media*, *o. interna*, and *o. cellulosa*, the latter constituting mastoid diseases.

A primary *otitis* or inflammation of the mucous membrane lining the auditory apparatus, if confined merely to the locality in which it originates, is usually self-limited, and hence is often described as an *otalgia*, or in the vernacular "ear-ache;" but if also accompanied by suppuration and discharge through the *meatus auditorius externus*, the term *otorrhœa* obtains.

A visible *otorrhœa* may or may not be a concomitant of mastoid disease; this must in a measure be determined by the character and relation of the discharge. If foul, sanious, and of an ancient cheese-like odor, it may, however, safely be taken for granted. The impossibility of recognizing a possible *simple otitis cellulosa* precludes specific mention thereof, since it must arise and disappear coincidentally with *otitis media*, or *o. media et interna*. The products of any and all forms of *otitis* may, and frequently do find outlet only through the eustachian way and post pharyngeal space, leading to the supposition of some catarrhal form of influenza as distemper; or *vice versa*, a catarrhal form of inflammation may extend to the ear securing an *otitis*: in so-called epizootics and distempers the ear usually suffers in greater or less degree, since there is marked sympathy among all mucous membranes, as observed in ophthalmias of strumous origin, or during dentition, &c. An *otorrhœa* of simple catharrhal origin is usually self limited, like the *otitis* from which it is developed, and this is more especially the case among canines than in man, being often of so trifling moment as to wholly escape attention. *Otorrhœa* also results from

impactions of foreign bodies, or hardened secretions, in the auditory canal or upon the drum membrane, provoking suppuration and violent otic inflammation; it is nature's remedy to remove the evil, and if unsuccessful is prone to result in mastoid disease. Panaceas, lotions, caustics, and nostrums innumerable administered for simple otic inflammations and *otorrhœa*, without knowledge of cause, are responsible for more injuries in canines than the utility will ever know, since the well trained animal obeys instinctively, and by eye oftener than through aural perception. A dog of ordinary intelligence that will not, during a moment of quiet, question some unusual concealed sound, as the ticking of a watch or vibration of a tuning fork, at a distance of four or five feet if held in the same line and plane with the ear, is most probably deficient in hearing. It is generally believed that all Pomeranian dogs are deaf. This is not true, save during puppyhood; as a race they are extremely slow in development of pneumatic cells, which not infrequently delay their appearance until the seventh, eighth, or ninth month.

As already intimated, any form of otic inflammation, if unre-
 relieved, either through natural or artificial causes, must invariably proceed to mastoid disease. Primary inflammation of the mastoid antrum and pneumatic cells, save as the result of direct injury, is unknown. The lining of the mastoid cavities is but a proliferation of the mucous membrane of the middle ear, hence the sympathy that must exist during inflammation of that cavity.

Mastoid disease manifests itself in three ways: 1. As periostitis of the outer surface of the bone. 2. Congestion and inflammation of the mucous lining of antrum and cells, commonly both. 3. Caries and necrosis involving the middle and internal ear, followed, perhaps, by *meningitis*, *cerebral abscess*, *thrombosis* of lateral sinus, and *pyæmia*.

The first may arise from acute inflammation of the middle ear and consecutive inflammation of the external auditory canal. The second and third are the result of direct extension of an *otitis media* to the antrum and spaces of the mastoid. Inflammation in any case may arise at any time during life and the continuance of purulent accumulations within the middle ear, and may appear

suddenly and without warning within a few hours, or days, only after a lapse of weeks,*months, or years! There is no definite period of incubation or invasion, and no phase of life exempt though, for obvious reasons, young creatures are more disposed thereto as a sequel to many maladies, especially from distemper.

Commonly the history of a case is most indefinite. Could the desired information be obtained, it would probably be something as follows: Restlessness, followed by shaking of the head, indicative of *tinnitus aurum*, sudden manifestations of deafness, partial or complete, succeeded by a brief period of excruciating pain. Unfortunately, these stages are commonly past ere scientific aid is invoked, and shaking of the head, upon which so much stress is often laid, does not again appear save as pus irritates the inner portion of the external auditory canal, producing a tickling sensation. Even a febrile condition may be difficult to establish except by visiting the creature at unusual hours, the pulse and thermometer alike failing to register any marked disturbance in circulation or temperature. If aural difficulty be surmised, the speculum and mirror will establish the fact; the great difficulty employing either being to get the animal in position favorable to light.

Mastoid pain when present is commonly so severe and peculiar in character as to be pathognomonic; once recognized it will never be misunderstood on a second occasion, and it frequently results in mania, or delirium, when the poor creature, by reason of lolling tongue, rigid lower jaw, injected eye, and dripping saliva, is commonly pronounced *mad*. The suffering alone is amply sufficient to secure injections of conjunctiva and cornea, and the pain experienced in moving the jaw, or on attempting to swallow, sufficiently accounts for other so-called rabic peculiarities; moreover the wandering mania which is held symptomatic of rabies, is every way peculiar to the excruciating suffering and delirium induced by *otitis cellulosa*! The pain radiates to the frontal, temporal and occipital regions of the affected side, and its seat is with difficulty determined even in the human animal. The poor dog, quiet for an instant, rests his head upon his paws while lying with the diseased ear inclining toward the ground; if standing

is still inclined, and a little care will probably reveal stiffness and rigidity of the lateral muscles of the neck, more particularly of the *sterno cleido mastoid*, which if found in connection with enlarged maxillary and sub-lingual gland, or hypertrophied lymphatics, is extremely suggestive as evidence. More especially may the disease be pronounced mastoid if tumefaction and swelling, markedly sensitive to the touch, is revealed at the posterior and upper border of the ear.

If not interfered with, the malady progresses rapidly; symptoms of general debility and marked anorexia supervene, followed by rapid emaciation, the result of derangement and perversion of the digestive and nutritive functions, the nervous and circulatory symptoms suffering accordingly. The face exhibits those unmistakable and peculiar evidences in the canine of excessive suffering, enfeebled vitality and weakened heartfunction, including the thin indrawn, uplifted lips; the animal is peevish, cross, melancholy, and prone to snap at everything offered, even his master's hand, though on second thought he will probably think better of it, and exhibit his affectionate nature; deprived of all rest and sleep, he may become dangerous, even vicious in his suffering and the dementia induced; salivation, the result of disinclination to swallow, may be profuse, perhaps accompanied by rigors; and life is indeed to him a veritable burden. Sooner or later, if relief be not afforded, caries and necrosis follow with their foul blackened discharge, succeeded by *meningitis*, *thrombus*, *pyæmia*, and finally death, which frequently results unexpectedly.

All the foregoing are important symptoms, yet so capricious is the disease, one or all may be conspicuous only by their absence. Often they are most vague and undefined in character, requiring nice perception and discrimination to determine, though a little patience and manipulation will usually discover some clew that will lead to others.

That such a malady demands most careful attention, not only in all the details of diagnosis, but also of treatment, is obvious, and that it cannot be safely meddled with by those ignorant of its pathology is also patent for the following reasons:—First, because of its exceeding gravity, by reason of locality and re-

lation to cerebral nerves and vessels, and the fatal trains of result that are so frequently the sequel:—Second, under the most favorable circumstances, unaccompanied by precise expert treatment a deaf and diseased ear must remain, offering abundant opportunity, perhaps, for a second onslaught of the same malady. Unfortunately the disease receives next to no attention at the hands of teachers of either veterinary or human medicine.*

(*To be continued.*)

CASTRATION OF CRYPTORCHIDS.

BY M. JACOULET.

(*Continued from page 311.*)

2ND ABDOMINAL CRYPTORCHIDY.

The second part of the castration is here divided into four steps. Those consist of: (*A*) Perforation of the inguinal interstice. (*B*) Searching and prehension of the testicle. (*C*) Ablation of the organ. (*D*) Supplementary dressing.

A.—*Perforation of the interstice.*—As Mr. Degive says, this is undoubtedly the most important, as it is the most delicate of the steps of the operation. Upon its proper execution the success of the operation almost wholly depends. Its skillful performance requires that the operator should bear well in mind the anatomical disposition of the parts, and its satisfactory completion depends mainly upon his coolness and well guarded confidence in himself and his qualifications.

The operator should place himself towards the back of the patient, as in the two preceding steps of the operation, and make

*Recently I was consulted by a lady who sought relief for an aural discharge of long standing, and who, as she informed me, had been advised by the family medical attendant to "let it alone" since it would be "a waste of time and money" to attempt alleviation. This was the utterance of a gentleman standing deservedly high in the medical profession, and echoes a widely prevalent idea. It is a leaf from a huge book of errors for which irresponsible and defective teaching is alone at fault. The impression is generally conveyed that to interfere with chronic discharge from the ear is to induce more serious results, and had its origin doubtless, in observation that the sudden cessation of an *otorrhœa* of long standing is frequently followed by grave cerebral disturbance, forgetting the latter is due to damming of purulent secretion in the mastoid spaces, and not to appropriate measures looking to removal thereof.

use either hand at his discretion. The hand and arm being well oiled, the former is formed into a cone by bringing the fingers together, and is carried towards the external ring, the internal or prepubic commissure and posterior edge of which are distinctly felt. It should be introduced into this ring by a slight pressure, and a rotary motion. Then turning it outwards, upwards and slightly backwards, it is pushed carefully, methodically and with all the tact at his command, into the inguinal interstice, by a semi or quarter rotation from left to right and again from right to left, close outwards to the external angle of the interstice.

In this way, the hand slowly penetrates, and as it were, slides onward, as it makes its way through a single separation of the two organs (the small oblique muscle and the crural arch) which resting against each other form the inguinal tract, and by the laceration of the cellular tissue which fills it up.

To avoid lacerating the small oblique muscle of the abdomen with the ends of the fingers, the operator must, during all the steps of the introduction of the hand, keep it well applied upon the crural aponeurosis, and upon the internal commissure, the dorsal face being turned forwards against the fleshy fibres of the muscles, and the fingers being slightly flexed backwards.

Deliberation in the work is indispensable. The surgeon should move slowly, and pause in his work if in any doubt as to the parts which are touched; and he should stop at the slightest doubtful sensation, to proceed again only when certain that everything is right.

Thus guided, the hand reaches the bottom of the interstice, and the pulp of the fingers will then readily distinguish the peritoneum, and through this, the intestinal circumvolutions. It remains only to perforate this, which is done by pushing two or three fingers through, and opening them, thus penetrating the abdominal cavity as the peritoneum is torn. The testicle or the epididymis is usually felt at once, and they are then brought outwards; but cases sometimes occur in which it becomes necessary to enlarge the opening in order to introduce the entire hand into the abdominal cavity.

This peritoneal laceration, through which access is had to the

abdominal cavity is, as we have already said, made some 12 or 13 centimetres outward of the linea alba, and near the sub-lumbar region. This renders the occurrence of hernia difficult on account of the elevated situation of the opening, as well as by the closing of the tract, which takes place as soon as the hand is removed, in consequence of the exact co-operation of the small oblique muscle, pushed backwards against the crural arch by the intestinal mass.

We do not hesitate to repeat that, if great caution has not been observed, as soon as the external inguinal ring is passed through, to turn the hand outwards in the interstice in order to avoid the perforation of the small oblique, by the position given to it, and the careful movement, the peritoneal opening would be made at a point too low, and too close to the median line, while moreover, the laceration of the muscle could not be closed up with precision at the moment of the withdrawal of the hand. Eventration would be the unavoidable consequence of the false manipulation.

In the perforation of the inguinal interstice the operator may meet two principal difficulties :

“1st.—The natural resistance of the external inguinal ring and

“2d.—The pressure resulting from the occasional very violent contraction of the muscles of the abdomen and posterior leg.”

Mr. Degive gives clear instructions for overcoming these difficulties. He says: “Very fortunately these obstacles are not insurmountable. The operator can always overcome them by proceeding slowly, quietly and watchfully.

“It is not a rare thing in these circumstances for the arm and hand to become quite exhausted and even paralyzed both by the efforts made and the continued compression experienced. In these circumstances the operator may easily lose confidence and the presence of mind so essential in the operation to insure a successful conclusion.

“It may even happen that he shall relinquish the undertaking just at the point of time when a little intermission for rest at the

proper moment would have enabled him to finish it with ease and assurance. We must acknowledge that we have not always followed this suggestion, and must plead guilty of once failing in the operation because of our proceeding too hurriedly and with an unsteady hand. It was our third operation; we had not completely exposed the inguinal ring; the hand had become fatigued by pushing against the resisting tissues, and was powerless when it reached the inguinal interstice. At this point our strength and facility of action failed, and the small oblique was run through. An extensive eventration was the result, followed by the death of the patient. This case furnished a good lesson and we consider it worth recording. Since then we have often noticed this weakness of the hand, especially after its introduction into the abdomen. Whenever this has taken place we have immediately suspended the operation, and have taken a moment for rest; we have even at times withdrawn the hand, either from the inguinal space or the abdominal cavity, and we have always had reason to be satisfied with our course.

“To be cool, wisely slow and always watchful of the strength of the hand with which we operate, such are the essential conditions of success in the perforation of the inguinal interstice.”

Like Degive we have failed twice in this step of the operation, with eventration as the consequence of the failure. We have since always succeeded in avoiding this accident by following the cautionary recommendations before given.

B.—*Searching for and prehension of the testicle.*—The inguinal interstice being opened, great care must be taken to avoid plunging the hand suddenly into the abdominal cavity. On the contrary, it is better to delay a little and allow the hand to resume its entire tactical force and facility before proceeding. Ordinarily the two or three fingers which have torn the peritoneum will find immediately about the opening and without penetrating deeper, either the testicle, or more commonly a portion of the epididymis, which, as we have said, is very large and pendent. When neither of these conditions occur the whole hand is to be pushed into the abdomen by slow degrees, advancing only as the fingers recognize by their sensitiveness the nature of the organs they are touching.

If the hand has been pushed too suddenly through the mass of the intestinal circunvolutions the connection of the parts might be much disturbed, and the search for the testicle rendered more difficult.

If, after all, the hand becomes fatigued and its sensitiveness impaired by the contraction of the abdominal muscles and of the posterior leg and it becomes necessary to withdraw it, let it have sufficient rest, carefully avoiding meanwhile the possible escape of the intestines.

Once in the abdomen, the hand must, as much as possible, be kept with its dorsal face turned towards the intestines, and without changing its position, the exploration continued with the pulps of the fingers. It is on the boundary of the pelvis, with the abdominal cavity proper on a level with the anterior border of the pubis which guides it, on one side of the median line, towards the internal face of the flank, more or less high in the cavity that exploration must be made. Either the testicle itself, or only the epididymis or simply the suspensory ligament, will then be detected.

It is not a rare circumstance for the hand when it has penetrated the abdominal cavity, to feel the epididymis, quite loose and *hanging down*, touching at once the ends of the fingers. It is a cord, dilated at both ends, very soft, smooth and slippery to the feeling. It is easily recognized by these characters, and as soon as it is taken hold of, the testicle, drawn with it, is readily felt by the hand.

This organ also is easily recognized. It is an ovoid mass slightly flattened, about the size of a hen's egg, sometimes somewhat larger, but oftener smaller, flabby yet elastic, and giving a peculiar sensation of roughness, due to the sinuosities of the blood vessels running on its surface. If, instead of it, one should take hold of a ball of manure, through the intestines, the error will easily appear from the fact that the ball of manure is not ovoid but an irregular form; soft, but not elastic; with a perfectly smooth surface, and without annex or support; and moreover the continuity of the canal in which it is contained would serve as an important differential character.

Again the hand may come in contact with the suspensory band, instead of the testicle. It must then be remembered that this is a flattened cord, dropping from the sub-lumbar region, where it is fixed, and supporting the testicle at its other extremity. The deferens canal at its posterior border offers sinuosities by which it can be readily recognized. In any case, as soon as the testicle or the epididymis has been secured, it is to be slowly drawn outwards, and in this way is easily brought to the point designed.

When the introduction through the peritoneum of two or three fingers only has been sufficient to find the organ, it is brought into the inguinal tract by slowly drawing out the hand. But when it has been entirely introduced into the abdomen, the testicle must be brought to the peritoneal opening without removing the hand, by simply flexing the fingers from forward backward. It is then pushed into the inguinal interstice, while with the dorsal face of the hand the intestinal mass is kept back and eversion prevented. When the organ has passed beyond the peritoneal laceration, the hand, forming a cone as when it entered the interstice, is very carefully and slowly withdrawn, in such a manner that the opening gradually retracts as a consequence of the pushing of the viscera against the fleshy portion of the small oblique muscle, and so becomes entirely closed when the fingers leave its edges. At the same time, the testicle has been drawn to the external inguinal ring, or near to it, but always sufficiently to have the cord as short as it may consist with security, by means of any of the constrictor apparatus in use.—

(To be continued.)

M. PASTEUR'S PREVENTIVE TREATMENT OF HYDROPHOBIA.

By W. PENDRY, D.V.S.

That many cases treated by M. Pasteur for hydrophobia would not, if allowed to run their course, develop any symptoms of rabies, is generally admitted to be a fact beyond dispute; but that the percentage is acknowledged by eminent men of both the medical and veterinary profession to be so small, will occasion some surprise. I have always held that hydrophobia is a much

more rare disease than it is even now, at this late date, suppose to be; and having given the subject considerable thought, and being anxious to gather some facts for myself, apart from that, seeing the *modus operandi* of inoculation for hydrophobia, I visited Paris a few weeks ago, but to give an account of what I saw in that respect would only be repeating what has now become "an old story," except that I may say that I saw some sixty-eight patients inoculated, and a more impressive scene I never expect to witness in my life. Old men and women, children of both sexes, of all nationalities, in fact, high and low, rich and poor, were there assembled together, all bent eagerly upon the same errand and to receive the same treatment, and as each one came forward to receive—what? the germs of rabies into the system; what else can we call it?—his or her face was a study in short, it was a scene I shall never forget, and I expressed a wish at the time that I was an artist with the ability of putting the same upon canvas, and if it had been executed by the same who painted "The Roll Call," it would have proved as everlastingly interesting.

During the pleasant time I spent with Dr. Fleming, the subject of hydrophobia was entered into, and he informed me that the local government board of London had appointed a committee to inquire into M. Pasteur's preventive treatment, and such committee consisted of Sir James Paget, Bart., F.R.S., chairman; Dr. Lander Brunton, F.R.S.; Dr. George Fleming, F.R.C.V.S.; Sir Joseph Lister, Bart., F.R.S.; Dr. Quain, F.R.S.; Sir Henry Brooke, M.P., F.R.S.; Professor Burdon Sanderson, F.R.S., and Professor Victor Horsley, F.R.S.

This committee had thoroughly investigated the subject, and had prepared their report, but which had not been published, and the committee could not agree on some points, but among the conclusions arrived at was, that *five per cent.* could be safely taken to represent the average number of cases of hydrophobia following bites of rabid dogs, when all classes of cases were included. I have expressed an opinion that not more than ten per cent. of cases reported as hydrophobia would really have developed rabies, and have been laughed at, and here we have a com

mittee of the highest order, who, after careful personal investigation, put it down at half that percentage. The report further says: "From this it would follow that since of the total number of ninety patients sixty-three were bitten by dogs known to be rabid, and the remainder by dogs whose rabidity was in some instances probable, and, in any case, as well investigated as in those instances on which the gross statistics at present available are founded, at least three patients should have died of hydrophobia had they not been subjected to M. Pasteur's treatment." Yet while placing this low estimate upon the cases treated, they acknowledge the one all-important fact, "that the material he employs for inoculation is actually the virus of rabies," besides coming to the conclusion that the interval between the bite and the first inoculation should not exceed fourteen days.

I am indebted to Dr. Fleming for a copy of the following cases, which were taken from M. Pasteur's note-book. I consider them of far more value than comments, and so forward them, in the hope that they will be laid before the profession of this country. They are dry facts, but they, in my opinion, speak volumes :

(To be continued.)

REPORTS OF CASES.

ACTINOMYKOCIS BOVIS.

By Dr. WM. HERBERT LOWE, State Veterinary Inspector, Paterson, New Jersey.

I was called, February 18th, 1885, to see a very interesting case. A cow owned by R. G. Ryerson, of Mountain View, N. J. was prostrate and in a very emaciated condition. I think I never saw a cow living have so deathly an appearance. There was a very great enlargement of the inferior maxillary region. In looking earnestly at the condition, while hearing the history of the case, I was forcibly impressed with the idea that I had a veritable case of actinomycosis, described by Fleming as "a new infectious disease of animals and mankind." The owner agreed with me that the cow had better be destroyed. I held a post-mortem at once and sent the inferior and superior maxillary regions,

tongue, heart, liver, kidneys, etc., to the New York Post-Graduate Medical College. In my last report to the New Jersey State Board of Health, I gave a brief account of the disease, which was published in the Agricultural Report.

A carefully prepared paper on actinomycosis in men and animals by Prof. Thomas E. Satterthwaite appeared in a recent number of the *Quarterly Bulletin* of the Clinical Society of the New York Post-Graduate Medical School and Hospital. The article has special reference to the case in question and is as follows:—

“Last winter I received a specimen of *actinomycosis bovis* from Dr. Lowe, Veterinarian and State Inspector in Paterson New Jersey. In this case the disease had attacked the upper jaw of a cow and the bones of the face were all more or less involved, the nasal roof being pressed outwards and the vault of the mouth forced down by the new formation, which had finally perforated the skin at the middle of the nose. In the puriform material that exuded I detected the characteristic yellowish white or lemon yellow granules that have been described in connection with this disease. It is generally known that Bollinger, in 1877, first called attention to the parasitic nature of the affection. Previously it had been known, in Germany at least, by the name of “hautzotz,” osteosarcoma, etc., but its real nature has not been appreciated.

In attacking the jaws of cattle it usually arises from the alveolar ridges, or from the cancellus tissue, and in the latter case it may easily be mistaken for a central osteosarcoma. On section the growth was permeated by bony trabeculæ, in whose interstices or ramifying passages, as they may be called, was a greenish yellow deposit, which proved on microscopic examination to be a low form of embryonic connective tissue, in which were embedded the actinomycotic bodies. These varied in size from a barleycorn upwards, were capsulated, yellow, and had a fatty feel.

Similar deposits have been found by some observers in the pharynx, larynx, gastric and mucous membrane and contiguous lymphatic glands of cattle. Sometimes there were fluctuating tumors near the angle of jaw, but apparently unconnected with it. Occasionally these deposits simulated in gross appearance, tuber-

les of the lung. They were often acinose or mulberry-shaped, and when teased apart found to consist of fungoid filaments closely intertwined, with expanded or knobbed extremities. Microscopic examination showed that the filaments represented the hyphens and conidia of a vegetable organization, closely allied to, if not a member of, the mould fungi, but a species that had never been known independently of this disease. The conidia or spores radiate from the stem of the hyphens, something like the petals of the common daisy, and hence the name *actinomyces* (*actinos*, ray, and *mukes*, a fungus). These appear to be two varieties of the fungus, or two forms under which it is found.

In 1878 James Israel published the histories of two human patients, who died with pyæmic phenomena, but where these fungi were found in the diseased tissues; it was not then known that the human family was attacked. In fact, though Israel detected the parasitis and described them, he did not appear to realize their true relation to the disease, nor did Langenbeck, who, in 1845, was probably the first to have observed them in either man or animals.

Ponfick, however, deserves the credit of being the first who recognized the causal relation they have to a variety of peculiar affections. At an autopsy in the Pathological Institute of Breslau, he found these fungi in the case of a man forty-five years of age, who had been suffering from a chronic pulmonary complaint, where an abscess had developed upon the right pleura. In the same year he saw and studied four additional cases.

In 1881 Partsch published two more and Rosenbach, of Goettingen, gave the clinical histories of others. Altogether, Ponfick had collected sixteen cases in his monograph published in 1882. He had then studied it in over fifty animals, chiefly horned cattle. He found that with them it usually attacked the jaw, near its angle. Here a protuberant mass pushed its way through the skin; hogs were attacked in a similar way, but more commonly took the form with them of a suppurative mastitis. In cattle a spontaneous cure may take place. Experiments thus far appear to indicate that it is not engendered by feeding; but after inoculation, or injection into the vessels, the characteristic phe-

nomena will develop in about a month; in three or four months there will be marked symptoms.

In the human disease there are some clinical points of special interest. If it attack the face, the result is usually favorable. In such cases it appears as a soft fluctuating abscess, with an infiltration of the adjacent soft parts at the angle of the jaw; in about one-half of such cases the disease extends as far as the sternomastoid muscle; sometimes it gravitates down to clavicle; it has the appearance of a cold abscess and is not associated with constitutional phenomena. After discharge has begun a fungous mass protrudes through the orifice, but eventually a sinus is left, usually communicating with several ramifying passages. In fatal cases the disease continues from seven to twenty months. In some of them metastases occur, and several parts, such as the pleura, pericardium and abdominal cavity were involved.

So far as we know, any part of the body may be attacked, but from the fact that it usually selects the jaws and that its attacks are contemporaneous with an ulcerated surface, while, on the other hand, these fungi are not uncommonly found about the teeth, it is conjectured that the parasite enters with the food, but only takes root upon an exposed surface. Since Ponfick's report twelve additional cases have been published, chiefly by Italian and German writers. The parts attacked have been the lungs (2), the intestines (3), the ovarian tubes (2), the jaw (4), the abdomen (1), two having been contributed by Dr. J. B. Murphy of Chicago."

The following references are given to facilitate the study of this interesting subject :

- (1). Bollinger.—Ueber eine neue Pitzkrankheit beim Rinde. Centralbl., d. Med. Wiss. 1877, No. 27.
- (2). Pontfick.—Die Actinomybose des Menschew. Berlin, 1882.
- (3). Partsch.—Zwei Fülle von Actinomyces. Breslau, Arztlich, Zeitschr. III. Jahr, S. 78, 1881.
- (4). Rosenbach.—Zur Kenntniss d. Strahlen Pitzkrankheit. Centralbl., d. Chir., 15, 1880.
- (5). Israeh.—Virchow, Archiv. LXXIV. S. 15.
- (6). Johne.—Bericht ueber d. Veterinier. Wesen in Konigich Saehsen. 1879 S. 71.
- (7). Belfield.—"Swelled head" in cattle, Am. Pub. Health Ass. Rep. 1883, 1884, IX. III., 115.
- (8). Whitney.—A Case of Actinomyces in a Heifer. Boston Med. and Sur. Jour., 1884, CX., 532.

POISONED BY CASTOR BEANS.

BY FLAVIUS J. SMITH, V.S.

On the night of September 25, 1886, I was called to treat two horses, the property of Mr. F. Upon my arrival I learned the affected animals had eaten some castor beans, that were left over from those planted last spring, on the morning of the 23d inst., and began to show signs of illness on the following morning. The symptoms were as follows, viz.: Complete loss of appetite, great thirst and nausea and gastro-intestinal irritation, frequently lying down in soft places and rolling from side to side. The pulse and respiration were increased in frequency and the temperature elevated. The animal most seriously affected purged freely and died soon after my arrival.

In the second case the bowels were constipated, and when relieved a large quantity of mucous came away with the contents. The amount of beans eaten by the sick animals could not be ascertained.

Treatment.—Antemetics, anti-spasmodic aperients and enemata; bromide of soda, used in small doses hypodermically, we consider one of the best equine antemetics in this and similar cases. The case was discharged on the third day, appetite fairly good and the bowels moving with their normal frequency.

Post-mortem examination made by artificial light. On exposing the bowels they appeared to be highly inflamed, and on laying them open from end to end it was found that the mucous membrane was destroyed almost their entire length. The spots of ecchymosis and extravasation and the inflammation gradually increased in severity from the stomach to about the centre of the cecum, where there was a gangrenous spot about ten inches long. The contents consisted of fluids and solids, tinged with blood, undergoing fermentation, and a few oats.

No fragments of the beans were detected. The lungs and liver were congested, otherwise appeared to be healthy, as were the spleen and kidneys. The blood was black and coagulated, thick and freely in the cavities of the heart and large vessels.

AUSTIN, Tex., Oct. 6, 1886.

A QUEER TOOTH-PICK INTERFERING WITH MASTICATION.

BY M. O'CONNELL, D.V.S.

Mr. W. S., of Greenby, Mass., called on me to visit his horse which, according to his story, was losing flesh very rapidly. He is a young horse and had always been fat until about six weeks ago, when he began to get thin. Desirous to examine the condition of his mouth and of his teeth, I introduced my hand into that cavity and found a stick of hard appletree wood laying across the palate, wedged between the fourth molars, and which could not be removed without heavy force prying upon it. A very offensive odor came from the mouth, and a large ulcer was found on the palate at each one of the molars. I saw him a few days afterwards: these ulcers were found healing very fast, the bad smell of the mouth had almost entirely disappeared, the animal was eating well, and everything showed that in a short time he would regain his good and natty appearance.

CLIPPINGS FROM MEDICAL PAPERS.

THE PLAGUE, AND HOW TO ESCAPE FROM IT.

By J. W. GADSDEN, M.R.C.V.S.

The animal industries of the United States are in imminent peril from the ravages of an insidious, contagious and incurable disease in cattle, commonly called pleuro-pneumonia or lung plague. Many years ago it obtained lodgment on the Atlantic seaboard from imported cattle, and notwithstanding repeated warnings of the danger to be apprehended from its spread, based upon the experience of European countries that have suffered severely from it, our people blinding themselves to their peril and by spasmodic and half-way measures simply averting the disease for a time in particular localities, have allowed it to spread until it has now obtained a firm foothold in the Western States, as well as in a number of the Eastern ones; and it is only a question of a very short time when it will find its way to the immense herds on the Western and Southwestern ranges.

unless radical measures are at once adopted to exterminate it where it already exists, and prevent its communication to other parts of the country. This is a matter that affects not only the raisers and dealers in cattle, farmers, dairymen and butchers, but every man, woman and child in the country, for it strikes directly at the source of supply of animal food. Allow this disease to spread in the future as it has in the past, and the day is not far distant when the animals affected can be counted by the million, and not by the hundred as at present, and it is easy to perceive the effect this will have upon our markets and the scarcity of beef that must be the natural result.

For years back efforts have been made in some of the States to stamp out the disease, and some slight attempt has been made by Congress to give National direction to these efforts, but unfortunately it has been on the penny-wise and pound-foolish principle. Owners of cattle naturally object to having their animals killed without receiving full compensation for them, and the government, both State and National, has failed to make provision to pay for the animals that should be slaughtered to eradicate the contagion. As a consequence, temporizing measures have been adopted, animals apparently recovered have been permitted to live and mingle with healthy cattle. A partial quarantine has been established about infected herds that has been so loosely enforced as to be practically of no effect, and numerous experiments of inoculation have been tried. It has been very difficult to educate the people of this country to believe that pleuro-pneumonia was contagious, and harder still to convince them that it was incurable. Many animals that had been but slightly affected, apparently recovered, and to outward appearance to the unprofessional eye, were restored to their normal condition of health, and yet these very animals have been the means of spreading the disease all over the country, and while apparently healthy themselves, were centres of contagion that disseminated the seeds of the plague to hundreds of healthy animals.

While acting as an Inspector of the United States Government in 1881, in my report to the Commissioner of Agriculture I recommended as an ultimatum, without which the disease could

never be eradicated, "the killing of all chronic cases, no matter how *apparently* healthy they might be." I arrived at this conclusion from careful observation of the operations of the disease not only in this country but in England, where I had considerable experience in examining its development and spread. Since that time I have carefully watched the progress of the disease in this country, and have communicated with some of the most eminent scientists and experts in England and the United States, who fully agree that the greatest danger to be apprehended is from these chronic or apparently recovered cases. Prof. G. T. Brown, Royal Veterinary College, London, professional adviser to the British Government on contagious diseases of animals, in answer to an inquiry I addressed to him, says, under date of October 21st, 1884 :

"It is quite impossible to tell at what period recovered animals cease to be capable of communicating pleuro-pneumonia, but we have ample evidence to prove that they are the cause of numerous outbreaks of that disease in various parts of the country; in fact, you may take it to be a matter of absolute certainty that it is quite impossible to stamp out pleuro-pneumonia in any country where the so-called recovered animals are allowed to remain alive." In even stronger language, if possible, is this opinion reiterated with regard to chronic cases by Prof. Thomas Walley, Principal of the Royal Veterinary College of Edinburgh; Prof. William Williams, F.R.C.V.S., Principal of the new Veterinary College, Edinburgh; Prof. James McCall, Principal of the Glasgow Veterinary College; Dr. James F. Simpson, Vice-President R.C.V.S., England; Clement Stephenson, F.R.C.V.S., Chief Inspector for Northumberland, Eng.; Prof. D. McEachran, Chief Inspector of Stock for Canada, and Principal of the Montreal Veterinary College; Prof. Liautard, Principal of the American Veterinary College, New York; Prof. C. B. Michener, of the same college; Prof. Rush S. Huidekoper, Principal of the Veterinary Department of the University of Pennsylvania; Prof. W. L. Zuill, of the same institution; Dr. Robert Ward, State Veterinarian for Maryland; and Dr. Miller, United States Veterinary Inspector, Camden, New Jersey.

In the face of this testimony, coming as it does from gentlemen who are eminent in their profession, and who have had exceptional facilities for observing and experimenting with the disease, and taken in connection with our own actual experience of the constant spread of the disease and its steady march westward, can we afford to longer close our eyes to the danger that threatens us, and allow all our cattle to be affected, before we awaken to the fact that action, prompt, heroic and effective, is needed at once to avert this dire calamity. See to it then that the laws already in existence are rigidly enforced and new ones enacted to meet the exigencies of the case. Have every animal killed that has or has been affected with the disease, or has had the slightest contact with diseased animals. The carcasses of healthy or apparently healthy animals killed by reason of contact can be sent to market after proper inspection to prove that they were not injuriously affected, while those that were infected should be buried or entirely destroyed.

In this way, and in no other, can the plague be checked and effectually stamped out. While the present outlay of money to accomplish this may be considerable, yet it will save millions of money in the future, protect the food supply of our country, and open the foreign markets which have been closed against us for even years by reason of the existence of the disease in this country, and in the end as a matter of investment alone prove of incalculable benefit to the cattle interests of the country, and indirectly be of advantage to all consumers of animal food.—*Philadelphia Practical Farmer*.

SANITARY VETERINARY REGULATIONS IN MASSACHUSETTS.

STATE CATTLE COMMISSION, }
 SECRETARY'S OFFICE, }
 DEDHAM, MASS., Sept. 20, 1886. }

To Mayors and Aldermen of Cities and Selectmen of Towns :

GENTLEMEN :—That there may be a better observance of the laws relating to the suppression of contagious diseases among domestic animals in the State, the undersigned would respectfully

call your attention to the following extracts from the statutes of the Commonwealth :

Section 9, chapter 90 of the public statutes provides that whoever knows or has reason to suspect the existence of any contagious disease among the animals in his possession, or under his care, shall *forthwith* give notice thereof to the mayor and aldermen of the city or the selectmen of the town where such animals are kept, and for failure to do so shall be punished by fine not exceeding five hundred dollars, or by imprisonment not exceeding one year.

Section 1, chapter 148 of the laws of 1885 further provides that whoever has knowledge of the existence of a contagious disease among any species of domestic animals in this State, whether such knowledge is obtained by examination or otherwise, shall *forthwith* give notice thereof to the board of aldermen of the city or the selectmen of the town where such diseased animals are kept, and for failure to do so shall be punished by a fine not exceeding five hundred dollars, or by imprisonment in jail not exceeding one year.

Section 2 requires that the board of aldermen of a city or the selectmen of a town, having received notice of a contagious disease among domestic animals in their city or town, shall *forthwith inform the board of cattle commissioners* of the existence of such contagious disease.

Sec. 1, chap. 90 of the public statutes provides that whenever any contagious disease among animals exists in this Commonwealth, the mayor and aldermen of cities and the selectmen of towns shall cause the animals in their respective cities and towns which are infected, or which have been exposed to infection, to be secured in some suitable place or places within their cities or towns and kept isolated.

Section 13, chapter 90, provides that mayors and aldermen and selectmen shall carry out all orders and directions of the board of cattle commissioners to them directed.

Section 19, chapter 90, provides that any person who fails to comply with a regulation made or an order given by the commissioners shall be punished by fine not exceeding five hundred dollars, or by imprisonment not to exceed one year.

The recent death of a citizen of this State from that loathsome and fatal disease, glanders, contracted from a diseased horse alleged to have been surreptitiously removed from isolation ; the general negligence of horse-owners, veterinarians and others in giving notice of the suspected existence of contagious diseases, and the lax or indifferent action of municipal officers in taking possession or control of animals within their jurisdiction suspected of being infected with contagion, makes it imperative that we call the attention of all good citizens to the statutes provided for the suppressions of contagion among domestic animals, and that we issue and publish the following

Regulations for the Guidance of the Mayors and Aldermen of the Cities and the Selectmen of the Towns of the State.

The commissioners therefore DO HEREBY ORDER the mayors and aldermen of cities and the selectmen of towns in this Commonwealth, when notified of the existence of any contagious disease among any domestic animals in their respective cities or towns, or of any animals suspected of being infected with such contagious or infected disease, to *isolate and securely hold* such animals till they are released by order of the commissioners.

Horses suspected of having the disease known as glanders orarcy may only remain in the custody of their owners, and in the stalls or on the premises previously occupied by them, when, in the judgment of the mayor and aldermen or selectmen, such owners can be *relied on with full confidence*, and when such stalls or premises are deemed by the mayor and aldermen or selectmen suitable places for holding such diseased or suspected animals till taken in charge by the commissioners.

LEVI STOCKBRIDGE, Amherst,

A. W. CHEEVER, Dedham,

J. F. WINCHESTER, D.V.S., Lawrence,

Commissioners on Contagious Diseases Among Domestic Animals.

REVIEW.

HORSE BREEDING, by J. W. Sanders, Chicago.

The most careful of the observers who have watched and attentively noted the progress which veterinary science has within the past few years achieved in this country, will find that the results of their discoveries are still imperfect, if they have failed to include among the evidences in favor of this advancement, the numerous additions which have been made to the English language and literature in terms and phrases relating to veterinary science in all its branches and departments. For a long time and down to a very recent period England was looked upon as the home and source of our veterinary literature, and contributed through the writings of her Percivall, Blaine, Youatt, Morton, Spooner, Fleming, Gresswell and others, about all the instruction which found its way into our American libraries. It is true that a few additions to this common stock have been made by American authors, but truly also they are but "few and far between," although owing to the existing lack of energy which characterizes the veterinary writer of America, almost any new book of native origin relating to the science in any of its special branches would be nearly certain to secure a warm welcome from seekers after professional information in matters of veterinary interest wherever it may be found, and more especially if the work should possess the value of the treatise now calling for notice at our hands, and like this should prove to be the work of an author thoroughly competent to handle the subject he has chosen.

"Horse Breeding" belongs to the class of books which every man ought to possess, and is as well calculated to be the companion of the veterinarian as that of the mere breeder; and while the omission of the fourth chapter would, in our opinion, improve the work, the fact that this is principally made up from sundry articles from the pen of Prof. Law will, in the opinion of many readers, tend largely to enhance the value of the work. The author tells us in his preface that his book should not be regarded as strictly a veterinary work. He may be correct in this, but still

zootechny in all its branches is properly a department of veterinary knowledge, horse breeding, it necessarily follows, must be included in any comprehensive consideration of veterinary science. Of the three chapters the first is appropriated to a concise elucidation of the general principles of breeding; the second acquaints with the various breeds of horses now found in the United States, and the third treats of stallions, brood mares and foals. The entire book comprises about 250 pages of reading matter, of highly instructive and interesting character.

CORRESPONDENCE.

IMPRESSIONS OF AN AMERICAN VETERINARIAN IN A TRIP TO EUROPE.

Editor American Veterinary Review :

DEAR SIR.—Many of my fellow practitioners seem anxious to learn through me the impression the English veterinarians have of their American brothers, as gathered by me during my recent visit there, and all the more so because I was returning to my native land after many years' absence in the role of an American veterinarian. It may be that they think I am like the average foreigner, who, on returning to his native heather, thinks there is nothing like "my own, my native land," and that they wish to test my zeal in that respect. But let this be as it may, I perhaps can give a true reflection of the opinions expressed of us during my visit there. I need hardly say that to those gentlemen of the veterinary profession whom I had the pleasure of meeting both in England and France, I introduced myself as an American veterinarian, and as such was received with open arms, and by many with that heartiness that made me feel doubly at home, and particularly by one whom we all hold in high esteem, Dr. George Leaning; a man whose very grasp of the hand gives you assurance of welcome and makes you feel that he speaks the sentiments of a large heart, when he informs you that "I am always glad to see our friends from across the Atlantic," and too was I received with the same kindness on my visit to the Pasteur Institute while in Paris, by Dr. Grancher and others.

It was during a stay in London that I made up my mind to pay a visit to the Royal Veterinary College, which is situated in College Street, Camden Town, and I cannot say that the first glimpse I got of that institution was favorably impressive, which perhaps was due to the naturally large ideas one gets of anything that appertains to royalty, and well might we say that a rose by another name is just as sweet.

The building is a low structure, and has much the appearance of the outer walls of an institute where people in this country go on free board. It is quite large, covering about a block; having a gateway in the center on going through which you get your first favorable impression, as the large square inside is laid out in an oval grass plot, fenced in so as to give a good wide gravel drive all round, which is skirted by the hospital, lecture rooms, offices &c., which are situated inside. I inquired of one of the few persons I saw there if any of the professors were to be seen, and was directed to the office of Prof. Ax, whom I found busily engaged in writing. I handed him my card, one portion of which he read twice, seeming hardly able to comprehend the letters "D.V.S.," which followed my name, and here it was that I allowed him to take the first trick, by explaining to him how incomprehensible to the average American were the letters "M.R.C.V.S.," which followed the names of their graduates, showing too that in hieroglyphics, they went us two better. He asked me if I wished to see the college, and on my answering in the affirmative, he secured me a guide in one of the students, asking me to return to his office, as he would like to have a talk with me. Our first visit was made to the hospital for horses, the whole of which is situated on the ground floor, passing from there to the dissecting room, where the smallness of the half dozen tables impressed me, and about which I expressed surprise, and which was not lessened when informed that they only dissected donkeys; here I felt like making a jocular allusion, but thinking perhaps it might hurt my friend's feelings I refrained from doing so. Our next turn was through several small lecture rooms, which seemed set apart for the lecture on some particular subject. There was a reading room for students with the different professional periodicals laying on a large table,

one of which, I was sorry to see, were American. The hospital for dogs was then visited, and which I found very complete, even a strong cell for suspected hydrophobia cases, having double iron doors, at the side of which was a ring attached to a chain passing through the side and fastened to the collar of a poor little devil of a dog that had no more rabies than I had, an opinion I expressed at the time. The general lecture room was then seen, and which struck me as being quite small, and I wondered where they put the three hundred students they are said to have there at times. One part of the building that impressed me the most was that provided for cattle, sheep, &c., a point that I at once conceded was ahead of anything that I had seen here. The museum certainly did not well bear the dignity of its royal calling, but no doubt was due, as I remarked at the time, to a lack of space to properly display its contents.

I here ought to say that this is what is generally termed the Veterinary School, and that really the Royal College of Veterinary Surgeons is situated in Red Lion Square, a new building, having much the appearance of a large plain private residence, and it is here where the examinations are held. I called there, but found there was little to be seen—the Secretary's office, a library with a fair collection of veterinary works, a large board room, in which the most conspicuous thing was a life-size oil painting of Prof. George Fleming, which was about all I could find to see. I find I am diverting entirely from my subject, and could continue to do so till I gave you an idea that I had a desire to monopolize the whole of the REVIEW by giving you my rough description of the Pasteur Institute in Paris, the Royal College of Surgeons, where through the kindness of Dr. Fleming was allowed to spend considerable time seeing some of the most beautiful dissections it is possible to see, but I will let that go, and try to get down to the subject I wish to speak about. On my return to Prof. Ax's office I was asked, as an opening point for discussion, if I was not a graduate of Prof. Liautard's school. I said I was a graduate of the American Veterinary College, of which Prof. Liautard was simply one of the faculty. "But," he said, "it is like all such institutions in America, a private school."

I said it was not, it being regularly incorporated under the State laws, had a governing faculty, and was under the supervision of the Regents of the University of New York State, and that I did not consider it any more a private institution than the school of which he was a professor. The conversation then turned on the course of studies, which appeared to be fuller than he thought they were, but he considered a two years' time was too short. I said that was a fact we were well aware of, and that it would not be long before the term would be three years, in fact Harvard and Pennsylvania's terms were now three years. I asked him about what percentage of the students were not allowed to graduate last year, and he said it was about fifty per cent. I informed him that the American had plucked thirty per cent. of her last year's class, which seemed to surprise him. He said at a late meeting of the Board of the Royal College he had introduced a motion to the effect that no allowance should be made to graduates of foreign or colonial schools, because he considered their standard of education so low, but it was voted down. I said I was pleased it was, and that I considered he did a great injustice to schools that were only in their infancy, and in no place more than America would he find a greater desire to increase generally the standard of veterinary education. I said the United States Veterinary Medical Association had lately appointed a standing committee, composed of members who had graduated from the different American and Canadian schools, with a view of seeing whether or not a general standard could not be adopted, and if so, hoped some good would result from their labors. I reminded him of the fact that, although the veterinary profession had been in existence in England for several centuries, and had only within the last few years succeeded in getting legislative recognition, and that in France the veterinary profession was to the present day not legally recognized; whereas it had not seen one generation in America and was now protected by law in several States, and that a law had recently been passed in New York State. He said he had not heard of it, and asked the nature of the Act passed lately, and, after stating what it was, he said he considered it a better law in some respect to the one they had, inasmuch that

prevented any one from *accepting* "any fee or reward," whereas their's simply prohibited any one from assuming the title of veterinary surgeon. I spoke of the idea I, with many others, had of the formation of a National Examining Board, who should examine the graduating students from the different schools, and whose diploma should be the only one recognized. This, he agreed, would be a grand idea.

After further conversation, I asked him which of the two countries did he consider had made the greater progress in veterinary science during the last ten or twenty years, and I was met by the frank and ready reply that he considered we had, supplementing that by saying we were fast catching up to them, and, no doubt, would soon pass them. I need hardly say that I expressed my satisfaction at having given him a better impression of American veterinarians than he at first seemed to have. While afterwards in company with Profs. Fleming and Pemberthy the above conversation was referred to, and the opinion expressed by Prof. Ax was endorsed. Prof. Fleming particularly referred to the Act lately passed in this State, having seen it in the AMERICAN VETERINARY REVIEW, saying it compared very favorably with their's, and among many other things, referred to the work of the Animal Industry Bureau, and the investigations made by Dr. Salmon, expressing himself that hog cholera and rouget were two different diseases, and in many ways showed he was taking a very lively interest in us. I afterwards had the pleasure of dining with Dr. Fleming and his family, spending a most enjoyable evening, but even here his enthusiasm led us into veterinary matters again. He spoke with considerable feeling of the army veterinary service, giving me a very interesting account of its workings, and expressing himself willing, were he a young man, of entering the service again, considering it a fine field for a young member of the profession, pointing with pride to the moral and social standing of the English army veterinarian. I was obliged to acknowledge that there was an exactly opposite condition of affairs in what little army service there was in America, in fact, having to admit that it was a disgrace to the country; a fact, after he had been informed how things stood, he agreed in. He

said he often received letters from this side, and handed me on he had just got, asking me to read it, as he could hardly make out what the writer wanted. It was from a party in the Western States, stating he was a veterinary surgeon, "*bourne*" in the year 18—; in short wanted to become a member of the Royal College. The letter throughout was of the Artemus Ward style, and would have done that gentleman credit. Is it to be wondered that when such literary stars herald themselves abroad as American veterinary surgeons that so low an opinion is formed of them? But thank the Lord, the death knell of such is now being heard throughout this country. I guess I had better stop, or I shall (as I feel at the present moment I could) require the whole of this month's REVIEW in dilating upon the subject in hand. In conclusion, I would say that I asked Dr. Fleming when we might expect him to pay us a visit, and he said he really had an idea of doing so in two or three years. I said there was one thing I was sure he would find among American veterinarians, and that was a hearty welcome.

Yours, very truly,

W. H. PENDRY.

CALL FOR A CATTLE GROWERS' CONVENTION.

Pubs. Am. Vet. Review, New York City, N. Y.:

GENTLEMEN—At a joint meeting of the executive boards of the National Cattle-Growers' Association of America and the National Cattle and Horse-Growers' Association of the United States held at the Leland Hotel, Springfield, Ill., Wednesday, Sept. 15th, the following resolution was unanimously adopted:

Resolved, That the President and Secretaries of the National Cattle-Growers' Association of America and the National Cattle and Horse-Growers' Association of the United States be and are hereby instructed to invite all Cattle-Growers' Associations, State and National Departments or Boards of Agriculture, the Governors of States and Territories, State or Territorial Live Stock Commissions, Agricultural Colleges, Live-Stock Exchanges, Agricultural Experimental Stations, and all associations whatsoever in any manner interested in promoting the interests of the cattle industry of the United States, to appoint two delegates each, and

all live stock and agricultural publications to appoint one delegate each, to participate in a Convention of Cattle Growers to meet with and under the auspices of the Consolidated Cattle-Growers' Association of the United States, at Chicago, Ill., Tuesday and Wednesday, the 16th and 17th of November next.

In accordance with the above, you are earnestly requested to prepare proper credentials and designate delegates to attend this convention, which will be held in the *Call Board hall* of the *Chicago Board of Trade*, beginning at 1 P. M. Tuesday, Nov. 16th, and continuing throughout Wednesday, the 17th, or until such time as the important business to come before the convention shall have been despatched. Representation in this convention, as you will understand from the above resolution, is not based upon membership in either of the two existing national associations, as the meeting is designed to reflect every shade of opinion throughout the entire United States of America; and as matters of the most serious possible import to the cattle-growing industry of the nation are demanding prompt and most careful consideration at this juncture, your earnest co-operation is sincerely desired.

The lapse of time makes it more and more apparent that until the cattle-growers of the entire Republic combine in one powerful central organization, the most vital interests of the entire body will be neglected and their industry left on the one hand at the mercy of contagious plagues, or hampered and restricted on the other by an interminable system of local quarantines. If any doubt has heretofore existed as to the justice of the claims of cattle-growers for protection at the hands of the Federal Government from the dangers of contagious disease, the late outbreak of pleuro-pneumonia near the very heart of the cattle trade, the city of Chicago, and the absence of any competent authority empowering either State or National officials to deal with the disease even at the very threshold of the greatest cattle market of the world, the vexatious local quarantines immediately proclaimed, and the inestimable damage resulting to the entire cattle interest herefrom, must compel the undivided attention of the cattle-growers of the United States, *as a purely business proposition*,

to the *immediate* and *urgent necessity* for adequate national law to shield us from the ruinous experiences of Continental Europe, Great Britain, South Africa and Australia. The emergency which now exists as a direct result of the deplorable negligence of Congress in failing to provide proper means for dealing with disease, is one of the gravest that our industry has ever yet been called upon to face, and the occasion calls for a convention that shall give thoughtful and earnest consideration to this burning question, and whose deliberations shall compel attention and command universal respect.

The food supply of the nation must be preserved from the taint of all infectious plagues, and the cattle-raising industry clothed with that protection which its importance in our national economy demands. The orders of foreign governments requiring our cattle to be slaughtered upon landing at their docks, must be revoked by the submission of a bill of health so clean in every particular as to place our exports above and beyond the slightest breath of all suspicion. Our work therefore appeals for the encouragement and generous support of every owner of cattle in the land, and the exigencies of the case are such as to call for the best thought, the wisest counsel, and the active assistance of our strongest men in every State and Territory. We trust that you will favor us with delegates who appreciate the gravity of the situation, and who will aid by their presence in contributing something towards lifting the cloud of depression that now hangs over the cattle industry of our common country.

A programme is being arranged which will include addresses upon questions of vital importance to the cattle-growing industry by well-known cattle men and statesmen of America and Great Britain, upon which general discussion will be invited. All railroads centering in Chicago will grant reduced rates of fare to visitors at the great American Fat Stock Show, which will be held November 8th to 19th, and as all delegates will be interested in that exhibition, advantage of this reduction may be taken.

We enclose blank credentials for delegates, and beg to ask that you give the matter your earliest convenient attention, ad-

ising us promptly of your action, as per blank notice and addressed envelope enclosed.

Respectfully submitted.

D. W. SMITH, Bates, Ill.
 I. H. METCALF, River Bend, Colo.
 JOHN N. SIMPSON, Dallas, Tex.
 THOS. B. PRICE, Brownsville, Mo.
 JOHN T. LYTLE, Lytle, Texas.
 I. O. HARKNESS, McCammon, Idaho.
 N. H. A. MASON, San Francisco, Cal.
 I. M. MUNDY, El Paso, Texas.
 J. K. SCOFIELD, Ft. Scott, Kansas.

ELMER WASHBURN, Chicago, Ill.
 THOS. BRADLEY, Philadelphia, Pa.
 ROBERT MILLER, West Liberty, Iowa.
 W. T. THORNTON, Santa Fe, New Mexico.
 GEN. P. PORTER, Muskogee, Ind. Ter.
 A. T. ATWATER, St. Louis, Mo.
 S. P. CUNNINGHAM, Ft. Worth, Texas.

Executive Committee of the National Horse and Cattle-Growers' Association of the United States.

D. W. SMITH, Bates, Ill.
 THOS. STURGIS, Cheyenne, Wyo.
 GRANVILLE STUART, Ft. Maginnis, Mont.
 JOHN CLAY, Jr., Chicago, Ill.
 J. M. CARY, Cheyenne, Wyo.
 THOS. B. WALES, Jr., Iowa City, Ia.
 E. C. ANDERSON, Side View, Ky.
 N. M. CURTIS, Ogdensburg, N. Y.
 J. M. CULBERTSON, Chicago, Ill.
 L. N. BONHAM, Oxford, Ohio.

W. A. TOWERS, Kansas City, Mo.
 G. W. SIMPSON, Boston, Mass.
 ADAMS EARL, Lafayette, Ind.
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 A. W. WOODFORD, Weston, W. Va.
 T. ALEX. SETH, Baltimore, Md.
 EDWIN PHELPS, Pontiac, Mich.
 R. C. JUDSON, Farmington, Minn.
 THEO. DAVID, Mitchell, Dak.
 ALVIN H. SANDERS, Chicago, Ill.

Executive Committee of the National Cattle-Growers' Association of America.

AN EXAMPLE WORTH FOLLOWING.

Editor American Veterinary Review:—

SIR: I have the pleasure of enclosing you a copy made from the report of Clement Stephenson, F.R.C.V.S., of September, 1885. I am indebted for this to John W. Gadsden, M.R.C.V.S., of Philadelphia. As you well know, there is no more earnest, indefatigable worker than he on the subject of contagious pleuropneumonia. I can heartily endorse his opinion, *i. e.*, that so-called "recovered cases" are dangerous, as I have seen proof that such animals have conveyed the disease to other cattle miles from any infected centre.

Yours, &c.,

CH. B. MICHENER.

GRADUATE OPEN FOR AN ENGAGEMENT.

NEW YORK, Oct. 14.

PROF. A. F. LIAUTARD:—Kindly insert following in next issue of *REVIEW* and oblige. A graduate of 1886 is open for any reasonable offer. Will go wherever there is money and prospects good.

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COCOAIN IN NEUROTOMY.

BRYN MAWR, Pa., Oct. 23d, 1886.

Editor American Veterinary Review:—

I would like to report the use of cocoaine as an anæsthetic in the operation for neurotomy. I injected about 30 m. under the skin over the part where the incision was to be made. In five minutes time a clear cut was made and the nerve exposed. I grasped it with, and rolled it between, my fingers without the animal evincing the slightest pain; even when the nerve was cut he did not make the slightest movement; by which I was led to believe he did not feel it. The wound healed much quicker than similar wounds without the cocoaine.

CHARLES T. GOENTNER.

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY SOCIETY.

The regular monthly meeting of the New York State Veterinary Society was held on Tuesday evening, in the lecture room of the American Veterinary College, Dr. Robertson in the chair.

Minutes of last meeting were read and, on motion, were adopted without alteration.

Dr. Pendry then read a paper on Catarrhal Influenza, in which he gave the symptoms of simple influenza and those cases that he considered should come under the heading he used. He took exception to the general term influenza, contending that it was too vague, and he thought was too often used to cover up

the ignorance of a more specific knowledge of the malady we were called upon to treat. He held that what was generally classed as influenza assumed several distinct types of a febrile disease, which should be more generally recognized; and spoke of cases that he had been lately treating, giving the symptoms and treatment he was following. In reference to the difference of opinion as to the cause and contagiousness of the disease, he said he was inclined to believe that the type he had referred to was contagious.

In the discussion that followed, Dr. L. McLean held that it was a specific disease, and that there were two distinct types of influenza, one sporadic, the other epizootic, with quite a distinction in the symptoms, and due to different causes. Dr. R. A. Findlay said he had noticed that the disease often followed the introduction of new stock into a stable where the best of attention was given to hygienic measures. He had seen such cases as described by the essayist, where the nasal discharge was very purulent, and considered it was contagious. Dr. Charum agreed that a more specific term should be used than simply influenza. Dr. Robertson referred to the general outbreak in 1872, when so many horses in many different places became affected at the same time, which, he thought, rather did away with the idea of the disease being contagious. Dr. Ogle agreed with this, giving as his reason that during that time he had two horses in a stable, where all the horses were affected, that never became affected. Dr. Waters considered the cause was atmospherical.

The essayist stated that in one stable where seven out of seventeen were affected, he had been instructed to place the remaining ten horses under any treatment that he thought would help to ward off the disease, and had placed them under iodide of potash and sulphate of quinine, and had as yet seen no symptoms of the disease in those thus treated.

A vote of thanks was extended to the essayist for his paper.

The motion of alteration of the by-laws altering the meetings to quarterly, instead of monthly, was taken up and, on motion of Dr. L. McLean, seconded by Dr. R. A. Finlay, the change was made, and on a motion of Dr. Pendry to go into effect after the next annual meeting.

On motion the names of Dance, Sutcliffe and N. F. Thompson were dropped from the roll for non-payment of dues.

The names of ——— Harris, V.S., New York, and Wm. Machan, V.S., New York, were proposed for membership, and referred to the Board of Censors.

Meeting then adjourned to the second Tuesday in November.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The fourth annual meeting of the Keystone Veterinary Medical Association was held in the lecture room of the Veterinary Department of the University of Pennsylvania, 36th and Pine streets, October 2, 1886, Vice-President, Dr. Rodgers in the chair.

After the reading and adoption of the minutes of the previous meeting, the Committee on Credentials reported favorably on the proposition of Dr. Henri Formod (coroner's physician). The report was excepted and the committee discharged.

The Committee on Ethics, consisting of Drs. Thos. B. Rodgers, W. J. Rayner and W. L. Zuill, made the following report :

Your Committee on Ethics, in obedience to instructions they have received have endeavored to perform their duties in this direction without prejudice or favor : 1st.—That the making of a contract with any person or company is not a violation of the code of ethics adopted by this Association. 2nd.—That the fulfilling of the terms of contract may be in direct violation of our code. 3d.—That the making and carrying out of the contract under consideration is judged by us (in view of the evidence which we have received in consultation with friends in the medical profession) to be a violation of our code, and that its terms cannot be carried out without conflicting with sections 2, 5 and 6 of our code. (Signed by the Committee.)

On motion, the report was received and committee discharged.

Treasurer reported a balance in the treasury of \$42.22.

The amendment to the by-laws offered by Dr. Huidekoper, that all committees report in writing, was adopted and became a law.

Dr. Henri Formod was elected a member of the Association.

Dr. Huidekoper spoke of the use of cocaine as a local anæsthetic in minor surgery. He had used it in trephining nasal sinus, punctured wounds of the feet and operation on quittor; also to produce insensibility before cauterizing the tail after docking. The mode of applying was to inject 3 ss. of the 4 per cent. solution five or ten minutes before operating. In every case the happiest results were attained; healing followed very rapidly.

Dr. Rodgers suggested the use of cocaine in castration.

The subject of casting to castrate was discussed, and approved by every member present.

The following officers were elected for the ensuing year : President, Prof. R. S. Huidekoper; Vice-President, Dr. Alexander Glass; Secretary and Treasurer, Dr. Chas. T. Goentner; Directors, Drs. Thos. B. Rodgers, W. L. Zuill, W. H. Hoskins, J. B. Rayner and W. B. E. Miller.

J. B. Rayner was appointed to conduct the newly elected President to the chair. Prof. Huidekoper made a few remarks, thanking the Association for the honor of being chosen presiding officer, and hoped the Association would be a success; he said the profession did not need elevating, but a great many of its members did.

Dr. W. S. Kooker made application for associate membership; he was elected for the ensuing year.

Dr. Rodgers said it did him good to look back to the organizing of this Association four years ago. Then he was compelled to consult with quacks of the lowest order; now he had the pleasure of consultation and association with men educated in their calling.

The discussion for next meeting, November 6, 1886, will be the law regulating the practice of veterinary medicine and surgery.

CHAS. T. GOENTNER,

Secretary.

6 9 AMERICAN
VETERINARY REVIEW.

EDITED AND PUBLISHED BY
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Honorary Fellow of the Royal College of Veterinary Surgeons (England),

ASSISTED BY

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Prof. R. S. HUIDEKOPER, M.D., V.S., D. J. DIXON, D.V.S., Hoboken,
AND OTHER VETERINARIANS.

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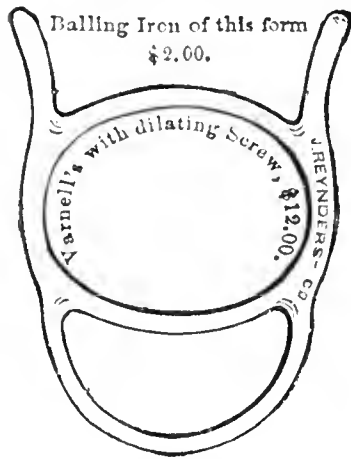
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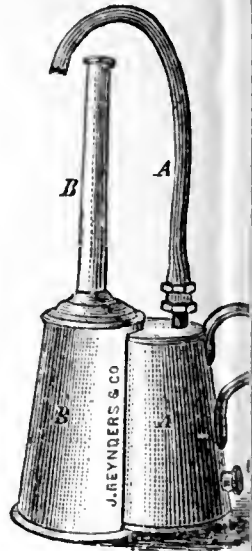
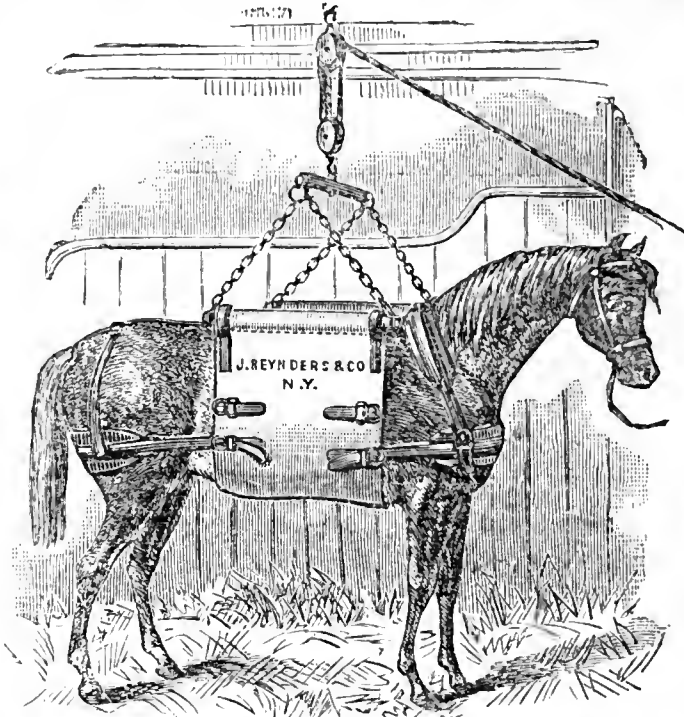
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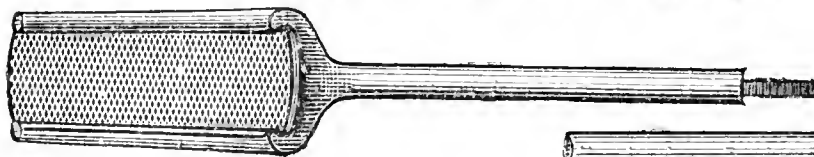
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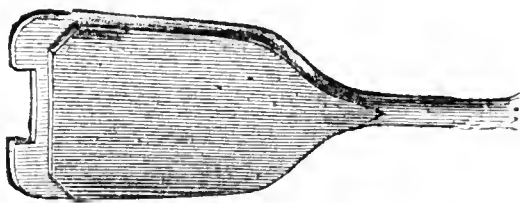
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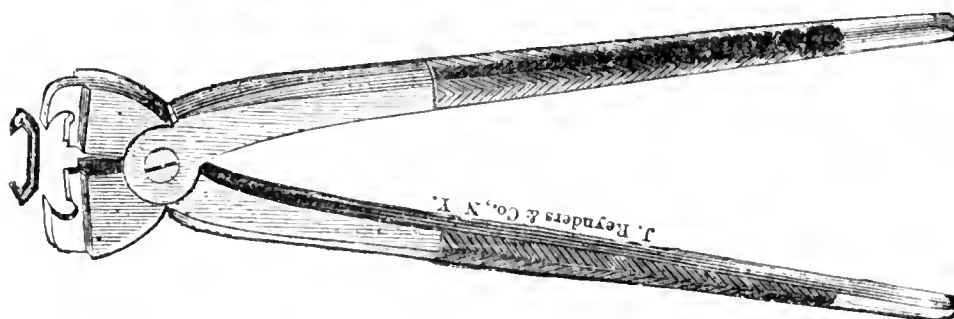
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AMERICAN VETERINARY REVIEW,

DECEMBER, 1886.

EDITORIAL.

THE VETERINARY CONGRESS in Chicago—members present—constitution—resolutions endorsing the Bureau of Animal Industry—motion of Dr. Hopkins—condemnation of inoculation—for the present it is a good measure. PREVENTIVE INOCULATION NOT ALWAYS ADVISABLE—a review of Dr. Paquin's remarks on the subject. OUR DELEGATE TO THE CATTLE CONVENTION—his good work—are recovered cases dangerous—the Bureau of Animal Industry's opinion—it is that of many other veterinary authorities, not of all, it appears—critic criticised—Hippocrates is called to witness—will our readers discuss the subject? HOG CHOLERA—the workers in its investigations—Dr. Salmon and F. S. Billings—the former knows it is not Rouget—hesitates as to its being schweineseuche—the latter is positive it is—he has found Schutz's germ—the same organism exists in both diseases. NEW OFFICERS OF THE U. S. V. M. ASSOCIATION—a reminder to the newly elected for the work expected of them. A CORRECTION. IN THE RANKS—Dr. B. McInnes, Jr., appointed Veterinarian to the Board of Agriculture of South Carolina. OUR THANKS to Dr. Herr.

THE VETERINARY CONGRESS, referred to in our last number, was duly convened in the city of Chicago on the 15th, 16th and 17th of October, and was held in connection with the annual meeting of the National Cattle Growers' Association. A large delegation of veterinarians from various States of the Union was present, representing the interests of the profession in various capacities. Veterinary colleges and societies and State veterinarians, as well as the Bureau of Animal Industry, responded to the roll-call. Amongst the most prominent names brought together on the occasion were: D. J. Dixon, American Veterinary College, New York; J. W. Gadsden, Pennsylvania; Charles T. Goentner, Secretary Philadelphia Veterinary Society; R. S.

Huidekoper, Pennsylvania; D. E. Salmon, Chief Bureau of Animal Industry, Washington; W. H. Rose, Bureau of Animal Industry, Washington; John Casewell, State Veterinarian of Illinois; Dr. N. H. Paaren, Illinois; Paul Paquin, State Veterinarian, Missouri; J. Gerth, Jr., State Veterinarian, Nebraska; Dr. James D. Hopkins, Territorial Veterinarian, Wyoming; George C. Faville, State Veterinarian, Colorado; T. J. Herr and M. R. Trumbower, of the National Bureau of Animal Industry; and Dr. Austin Peters, Veterinarian of the Massachusetts Society for Promoting Agriculture.

The principal object of the meeting was the final organization of the Association, which came into existence a year ago, and for the consideration, from the veterinarian standpoint, of the subject of contagious pleuro-pneumonia, with the danger and damage which marks its progress, and to determine, if possible, the means best calculated to not only prevent its spread, but also to eradicate it from the country.

Various essays on the subject were read by members of the Congress, which we shall take pleasure in reproducing in our pages as soon as the papers, which the authors have kindly placed at our disposal, shall reach our hands. These will probably include contributions from President R. S. Huidekoper and from our delegate and esteemed friend, Dr. Gadsden. Dr. Faville also read a dissertation on the need of a uniform inter-State sanitary code, which was received with some demonstration of approval, and brought out much discussion among the members.

The permanent organization was completed at the meeting of Wednesday, the 17th, by the adoption of the following constitution:

ARTICLE 1. This association shall be known as the National Veterinary and Sanitary Association of the United States. It shall consist of State, Territorial, and Government veterinarians, members of sanitary boards and live stock commissions, and representatives of veterinary colleges, associations and journals.

ART. 2. The purpose of this association shall be to contribute to the diffusion of true science, particularly the knowledge of sanitary science as applied to the prevention and the spread of contagious diseases among domestic animals.

ART. 3. The officers of this association shall consist of a president, two vice-presidents, a secretary and assistant secretary, all of whom shall be elected at each annual meeting, and a majority of all votes present shall be necessary to a choice.

ART. 4. It shall be the duty of the president to preside at all meetings of the association. The usual parliamentary rules shall govern.

ART. 5. It shall be the duty of the secretary to keep a correct record of the proceedings.

ART. 6. It shall be the duty of the president to appoint a committee at each annual meeting to take up a collection or make an assessment to defray necessary expenses.

A resolution, introduced at the same meeting, proposing an expression of appreciation by the congress of the work accomplished by the Bureau of Animal Industry, elicited much discussion and considerable variance of opinion, and was finally adopted in the following form :

Whereas, The existence of contagious pleuro-pneumonia among animals in the United States is annually a source of great loss.

Whereas, The great cattle industry, commerce and food supply of the country are peculiarly threatened by the recent extension of contagious pleuro-pneumonia, and

Whereas, Real and alleged outbreaks of contagious diseases require constant investigation and control; therefore, be it

Resolved, That the State veterinarians and veterinary sanitary boards of the United States, in convention assembled, recognize the wisdom of Congress in establishing the Bureau of Animal Industry, and while heartily appreciating the valuable services rendered by the bureau in the past, we would recommend such additional legislation as to enable it to effectually extirpate contagious pleuro-pneumonia and to control such other diseases as may from time to time appear.

An election of officers followed, which resulted in the choice of J. L. Brush, of Colorado, as president, Dr. J. D. Hopkins and V. T. Atkinson as first and second vice-presidents, Dr. P. Paquin as secretary, and Dr. M. R. Trumbower as assistant secretary.

A discussion succeeded on the subject of inoculation, in connection with resolutions which had been introduced by Dr. Hopkins on the day previous. This turned out to be a serious question, and excited much discussion and wide divergence of opin-

ion. In the end, however, the original mover of the resolutions had the pleasure of witnessing their adoption, which seems, for the present, to settle the doom of the inoculation theory. The resolutions of Dr. Hopkins are in the following words :

Whereas, The contagious pleuro-pneumonia of cattle exists in certain restricted localities of the United States; and

Whereas, Inoculation is being practiced in certain States as a preventive measure and is being advocated for general adoption; and

Whereas, The experience of other nations has shown that this contagion is prevalent in localities where inoculation is practiced, and that inoculated cattle are dangerous to other animals with which they afterwards cohabit; and

Whereas, The veterinary profession of Europe condemns inoculation except in localities that are thoroughly infected and where no effort is being made to extirpate the plague; therefore be it

Resolved, That considering the limited territory infected in this country, every effort should be directed to the thorough eradication of this disease from America.

Resolved, That we consider inoculation to be an extremely dangerous and objectionable practice in the present condition of affairs in this country, and one which should be discouraged by the veterinary profession and prohibited by law as long as there is a possibility of stamping out the disease.

In considering the work performed by this second meeting, we cannot feel otherwise than well satisfied with the result accomplished in the creation of an association essentially composed of veterinarians, all of whom are men well educated and well endowed for the special work in which they have enlisted. There ought to be no doubt of the speedy enlargement of the membership from the ranks of those for whose admittance the door now stands open; and it is to be regretted that the present conditions should be as exclusive as they appear to be, for it is evident that the balance between the inclusive and exclusive provisions of the constitution is not yet just what it should be. But this may be remedied hereafter, when, it is to be hoped, suitable changes will be made which shall provide for the admission of all qualified veterinarians who may desire to contribute their own knowledge

and experience to the general fund, in return for the advantages they may derive from association with their fellows.

We can but give expression also to our satisfaction with the resolutions endorsing the work of the Bureau of Animal Industry, for we feel confident that all the officers connected with the Bureau have attended fully to their duties. We have before remarked that if the work of the Bureau fails, it will not be the fault of the veterinarians.

We think Dr. Hopkins has reason to be gratified by the passage of his anti-inoculation resolutions, as while the propriety of the operation will be generally recognized, it is pretty evident that it cannot as yet be fully accepted as a practical measure, unless the stamping-out process is to be entirely abandoned.

PREVENTIVE INOCULATION NOT ALWAYS ADVISABLE.—We have just received the *Missouri State Agricultural College Bulletin*, No. 24, relating to contagious diseases and their prevention, by Dr. Paul Paquin. It embraces a report of Prof. Paquin's sojourn in Paris; of his studies under Pasteur, Nocard, Cornil, Chantemesse, as well as attendance at the Alfort School of Veterinary Science. If there were any doubts in the doctor's mind before going abroad as to the part germs play in the causation of disease, his researches while there have entirely removed them. The *Bulletin*, written as it chiefly is for agriculturists, is replete with familiar and apt comparisons, that make the possibility of disease extension by these micro-organisms very practical and plain. It also shows these bodies to be the *cause* and not the result of such diseases.

Pasteur's methods of *attenuation* were carefully studied, and if the agriculturists of Missouri will do their part, we may soon have our viruses attenuated here, when they will be free from the fatal objection urged, in some instances, of an imported virus being *too old*.

It is also hoped that Dr. Paquin will be granted time and means to carry out investigations as to the exact nature of our swine plague, and to prepare, if possible, a prophylactic attenuated virus.

A portion of the *Bulletin* is taken up with a plea for the value

of inoculation as a preventive of contagious pleuro-pneumonia. There is no question among veterinarians as to the efficacy of inoculation in limiting the spread of this disease, nor in reducing the death-rate. But will it *exterminate* the plague? No! By advocating inoculation we give rise to a false security. We encourage all those *whose cattle are affected by this disease* to hinder and oppose the radical laws which we *must* enact if we are ever to be free from it. Prof. Paquin must realize this. Let us then cease to speak of inoculation even, until we prove ourselves unable to rid the country of this exotic plague. Inoculation means contagious pleuro-pneumonia forever; it does not *hint* at extermination. Let us emulate in Missouri the good work done in Massachusetts.—(M.)

OUR DELEGATE TO THE CATTLEMEN'S CONVENTION.—We have received a communication from Dr. Gadsden, who had kindly agreed to act as delegate of the REVIEW before the Cattlemen's Convention, which was held in Chicago on the 15th, 16th and 17th of last month. After relating the results of his investigations, which so evidently helped him to prove beyond doubt the existence of contagious pleuro-pneumonia, and assisted him in converting many unbelievers in the presence of the disease, our friendly correspondent calls our attention to the action of the Convention relating to the resolutions passed by the veterinary association concerning the adoption of the stamping-out process with appropriated indemnity to the owners, and the prohibition of inoculation as a means of arresting the progress of the disease. We understand that the following extract from the report of the Bureau of Animal Industry has been of much assistance to Dr. Gadsden in obtaining the points for which he was fighting:

SECOND ANNUAL REPORT OF THE BUREAU OF ANIMAL INDUSTRY, 1885—p. 145.

"It has also been observed that inoculated animals are dangerous to others for an indefinite time after the operation. Probably this is due to the fact that such animals were really recovered cases of pleuro-pneumonia. A herd of animals inoculated with pleuro-pneumonia virus is consequently an infected herd, and should be treated as such, * * * but if the malady is to be extirpated, the whole herd must be slaughtered. In no other way can there be a certainty that all affected animals are destroyed, or that the contagion is extinguished." *

"From a careful study of the whole subject of inoculation for pleuro-pneumonia, we conclude (1) that this practice does not greatly lessen the losses which occur from lung-plague infection; (2) that it is powerless to extirpate pleuro-pneumonia from any country; (3) that it can only be practiced with safety to the community where the inoculated herds are kept under careful supervision, and where inoculated animals can only leave infected premises to go to slaughter; (4) that there is no good reason for practicing inoculation in America, and that it should be prohibited by law, except where the conditions just mentioned are rigidly enforced."

The discussion of the subject of inoculation might also with propriety have been made to cover and include that of the danger attending the "so-called cured cases." Perhaps in the estimation of the assemblage present, these dangers are too well known and too generally recognized to need re-discussion. Perhaps, also, their own observations, as well as those of Law, Salmon, Lyman, Michener, W. B. Miller, McLean, Gangee, Fleming, Walley, Delafond, Reynal, Bouley, and many others, were deemed sufficiently strong and decisive to satisfy them that a "recovered" case of contagious pleuro-pneumonia is a dangerous animal.

But this, it appears, is not the opinion of every veterinarian, and this varied opinion (not, of course, any the less entitled to respect because of its variance) has just now subjected us to the enmity and severe animadversion of one of our friends, as the following article indicates. We copy it from the *Turf, Field and Farm*, where it appears as a reply to some remarks of our own in our last number:

THE CRITIC CRITICISED.—Having in a previous issue commented on an article on contagious pleuro-pneumonia, furnished us by Dr. Gadsden, of Philadelphia, for publication, the editor of the AMERICAN VETERINARY REVIEW criticises us severely for stating the doctor's "so-called cured cases" were in nowise an infecting medium. We called attention to the fact of having conducted *a careful* experiment with a view to determining the contagious nature of such cases, and found to our satisfaction that the malady could not be reproduced from the contents of an encysted lung, and also to the tendency of professional people to jump to conclusions. The latter, our antagonist inadvertently admits, has in his case been done, then launches into the ambiguous statement and a liberal use of italics, thus:

"And his opinion is based on—what? *On a process of experimentation, which, perhaps, was not carried out by the supporters of the contrary opinion, but* BY HIMSELF. We agree with him; evidently, his experiments were not followed by any processes producing anything resembling contagious pleuro-pneumonia, or its remotest symptoms. But a little careful thought must lead to the conclusion

that these experiments were of no value to the inquiry presented. Too many evidences exist which seem to prove this dangerous condition of 'recovered cases.' "

Shades of Hippocrates! Mr. Editor. "Seem"—is this the best you can do? Can't you give us one little fact? But perhaps you will tell us how Pasteur arrived at his great results; how Jenner immortalized himself; how preventive inoculation against contagious pleuro-pneumonia was first understood, but by a carefully conducted process of experiments. Can you name any other mode or method of procedure that will furnish as positive and reliable results? Experiment is a great magic wand wielded by the student of morbid pathology, to extricate from the depths of oblivion those things the medical fraternity are so eager to call science. Deprive him of this, and you reduce him to the condition of a water-logged ship on a boisterous sea. Again, he tries to prop a weak position by citing a single English veterinarian as follows:

"The lot of cattle in which the disease first appeared was bought in April, 1884, and remained apparently healthy up to July of this year (1885); the disease was then developed, and in so violent a form that the first animal died on the seventh day. This rapid death, not usual in this disease, was explained by the post-mortem examination, which revealed the disease in two forms or stages, namely: recent acute disease, and old encysted cases. The latter had lain dormant for fifteen months."

Inasmuch as the author of the quotation refers to this as *one of a number of outbreaks, it serves nothing*. If these cases had a second attack, which we do not believe, there is just as good reason for believing they contracted the malady from extrinsic or from intrinsic causes. We do not believe an animal that has passed through an *attack and recovered will ever have another*. If so, what becomes of preventive inoculation? When a lung is once diseased, it is a well-known fact that it is ever afterward susceptible to sporadic influences, and the veterinarian simply mistook a case of ordinary sporadic pneumonia for something else.

Again, he writes:

"To conclude, we cannot help believing that such assertions as the one made by the well-qualified veterinary editor of *Turf, Field and Farm* are most unfortunate. There are already sufficient real difficulties in the way of the important work undertaken for the eradication of the disease from the country, without introducing others, without validity or value, which will not stand the test of careful inquiry, which have been proved erroneous, and which at best, if undoubtedly correct, would, after all, simply save the lives of a few poor old broken-down animals, useless in life, and worthless even after death."

Mr. Editor, do not waste time in useless fretting, but manfully make another attempt to secure that which seems *so easy*, but which you have so signally failed in doing this time, and thus undo the wrong we have inflicted. Does it not occur to you that you may be the sensationalist in this case and not I? The veterinarian is looked upon as a preserver and not a destroyer of life. The knacker can do that even better, and it conforms to his calling. This is not a question of dollars. An animal is not always preserved for its intrinsic value alone, and when the veterinarian informs his employer that we can kill but cure his case, he

invariably drops a peg in the confidence of that client. Let us cite a case in point: Over in Jersey the State Board of Health, acting under State law, has the management of contagious pleuro-pneumonia, and by its perfidy, want of practical knowledge of the disease, and indiscriminate slaughter of everything that is so unfortunate as to be sick, has wrought a reign of terror among the farmers and dairymen of that section. As soon as an animal shows the slightest tendency to indisposition, it is at once taken to some secluded place and jealously guarded from all obtruding eyes, fearing lest the Board should hear of it and cause a valuable animal to be destroyed which usually recovers. Over there every sick animal the Board sees or hears of is magnified into contagious pleuro-pneumonia and slaughtered on the assumption that it may be a dangerous case. Being aware of this, the farmer fears to trust any one, and thus veterinary practice among bovines is at a minimum in Jersey. Now, Mr. Editor of the REVIEW, if you will show us a single instance where a "so-called cured case" has *seemingly* produced an outbreak of contagious pleuro-pneumonia, we will undertake to show you a more direct avenue through which the same malady was contracted. Come with us for a single day, and we will show you a number of such cases that have mingled with otherwise healthy herds for months and years without superinducing a single outbreak. This is fact against your theory.

The breeding interests of our country have suffered greatly from such sensationalism, and we propose to do our little toward restoring a lost confidence.

VET. ED.

"Shades of Hippocrates!" to use our friend's exclamation. We certainly never intended to wound his feelings, and we re-peruse our remarks in vain in search of any word or phrase to which umbrage can properly be taken. About all that, we believe, need be said in answer is, that on this important question, and of course, a universal truth—"one positive fact can never be upset by millions of others," if the circumstances in all are alike. With many others, we believe that these "recovered cases" are dangerous, and we cannot conceive that the experiments referred to by our friend have been anything more than a peculiar mode of inoculation, and that he ought to be very thankful that his manipulations were not followed by septic complications, as might have been the case. Our columns are open to any of our readers who may consider the subject of sufficient interest to warrant its further discussion.

HOG CHOLERA seems to be the disease which at present, next to pleuro-pneumonia, principally occupies the attention of veterinarians and other investigators. Amongst the latter, none have occupied a more prominent position than Dr. Salmon and Prof.

F. S. Billings. Dr. Salmon has for years occupied his time in searching for the germ which, in his view, originates the disease, and has at various periods embodied in his reports to the Department of Agriculture his scientific views and discoveries, with announcements of what he believes to be the true cause and nature of the swine plague. Our readers have been made largely acquainted with the fruits of Dr. Salmon's labors, to which they have had access through his published reports to the Bureau of Animal Industry. Unfortunately, Dr. Salmon has sometimes been obliged to revise and correct his opinions, and he has not hesitated to do so whenever new discoveries and developments have brought new light to his mind, and new convictions to his judgment.

In one of his later reports he announced his conclusions that past all doubt the hog cholera of this country was not the same disease as the one for which we had provided him with Pasteur's vaccine, and positively stated then that it was not the Rothlauf of the German. Was it the schweineseuche? He was not prepared to say, for he has offered us the "gratuitous observation that it would still be premature to jump to the conclusion that even the German schweineseuche is identical with our hog cholera."

Dr. Billings, on his side, has also worked hard in the investigations of hog cholera, and has arrived at the conclusion that the German and American diseases are similar, by the discovery in a choleraic hog of an organism entirely similar to that described by Schutz in schweineseuche. The communication we begin reprinting to-day from Dr. Bowhill will on that account be found most interesting. We regret that the paper does not come direct from Dr. Billings, as it would give positive data establishing beyond doubt its priority of discovery. The priority, however, in this case is of secondary importance, and a matter of only personal concern. The great question seems now settled that the American and one of the German plagues are identical in their nature.

NEW OFFICERS OF U. S. V. M. ASSOCIATION.—We publish the list of officers elected at the last meeting of the United States Veterinary Medical Association, and the members of the various

committees, with a hope that in our doing so we may remind all of those, at least, upon whom any special duty may devolve as members of committees that they be prompt in preparing themselves for the active discharge of their functions.

CORRECTION.—At the suggestion of Dr. J. C. Meyer, Jr., we correct a statement made in the REVIEW of last May, which erroneously placed a contribution to the Bouley monument to the credit of the son instead of the father. Our good friend Dr. J. C. Meyer, *senior*, it is, who will be perpetuated in one or more of the stones of the monument which commemorates the great veterinarian.

IN THE RANKS.—South Carolina, it seems, has no desire to occupy the rear of the great army of progress in veterinary science. We have just received the pleasant announcement of the appointment of Dr. B. McInnes, Jr., as veterinary surgeon to the Department of Agriculture of that State. Our sincere congratulations are tendered to the doctor, who is well deserving and is well fitted for the position.

OUR THANKS are tendered to Dr. Herr for the handsome photographic pictures he sent us from Chicago. They represent sections of lungs obtained from animals destroyed in the Phenix Distillery at various dates, and show the characteristic lesions magnificently. We intend to have them framed and placed in the museum of the American Veterinary College.

ORIGINAL ARTICLES.

CANINE INFLAMMATORY MASTOID DISEASE.

BY G. ARCHIE STOCKWELL, M.D., F.Z.S.

(Continued from page 356.)

Caries and necrosis may occur in the following positions:—

1. In the external plate of the mastoid, and in the posterior wall of the meatus.
2. In the inner wall of the tympanum involving and destroying the *cochlea* and *semicircular* canals.

From a canine skull before me I withdrew a piece of necrosed bone that would fairly rival the mass obtained by Mr. Peter Crompton from

the ear of one of his patients, and that embraced the *whole* internal ear, *vestibule, cochlia and semicircular canals*. 3. In the tegmen or roof of the tympanum, and also in the antrum, provoking meningeal inflammation, or, perhaps, abscess of the middle lobe of the brain lying above; in the inner plate of the mastoid, also resulting in meningitis, cerebral abscess, thrombus of the lateral sinus, and resultant *pyæmia*: or a phlebitis may extend from the mastoid cell along the mastoid emissary vein, involving the lateral sinus, thereby securing thrombus, and ultimate fatality.

Some of the more rare occurrences of mastoid disease, or *freaks*, perhaps, would be a better term, are: Inflammation of and congestion of the eye and orbit of the affected side with, perhaps, protrusion of the globe. Cerebral abscess of the middle lobe occurring on the opposite side of the head arising from reflex and sympathetic causes, and periosteal abscess midway between the mastoid process and occipital protuberance.

In asthenic subjects, whether the condition is one of long standing or a sequel merely to the disease itself, inflammation is equally prone to advance to caries and necrosis with little or no manifestations of acute suffering or pain; consequently the speculum and mirror must be relied upon largely for diagnosis. At intervals too, during the progress of the disease, pain if present will altogether subside or disappear, and such subsidence is the more unfortunate in that it inculcates a prognosis that is sure to be a cause of regret later on; especially is this so if there is coincident disappearance of tumefaction and swelling.

As before suggested, febrile conditions may be altogether wanting; especially is this the case after the inflammation has passed from the acute to the chronic stage. More is to be depended upon a dry parchment skin, dry staring coat, dry glassy eye and a hot ear; the nose is hot, yet may be either dry or moistened, according as inflammatory products do or do not find their way through the eustachian tube and posterior nares.

While you may find a natural and safe outlet by process of time and disintegration and with much less serious attendant results than might reasonably be expected, a vast amount of unnecessary suffering is included along with "wear and tear."

that can with difficulty be estimated. The vital resources are sapped, wasted and frittered away generally, and a system already impoverished and drained must needs be further weakened by injudicious delay.

To a query why inflammatory mastoid disease is so severe in its course and results, a critical examination of the parts involved affords ample reply. Aside from the anatomical relations already noted are a complex system of veins ready and waiting to take up the poisonous materials and carry them to heart and lungs for elimination, and whence the surplus remaining is distributed to the whole economy in vain effort to find new outlets, we find an intricate net-work of nerve filaments constantly conveying morbid impressions and influences to the great nerve centres. The *seventh pair* of cranial nerves is primarily devoted to the uses (and abuses) of the auditory apparatus, while through its third branch, by way of the otic ganglion, the *fifth pair* send minute filaments to meet those of the *seventh* in the innermost recesses of the mastoid cells, and we know full well that the burdens of any one nerve or series of nerves are in some degree borne by others, even those most remote. Again in mastoid disease the pus is enclosed in a dense bony case, and while it may, and sometimes does (though rarely), penetrate the external wall, it is still held in firm bondage by the interposition between it and the outer integument, *first* of a dense periosteum, and *second* by tendons even more impermeable. Though it is possible for tendons and periosteum to be torn from their attachments to the bone by excessive accumulations of purulent matter behind them, a terrible power is at the same time brought to bear upon the inner or cerebral table of the mastoid, and if not interfered with, from the most favorable points of view a profuse abscess must result, extending over a space two or three inches in diameter, burrowing downward and backward amidst the tissues of the neck.

Whatever the character of aural disease, the local treatment should consist, from first to last, largely of hot water douches. With man we begin with water as hot as can be borne; but with the dog the process must needs be reversed. Commencing with fluid at about 90° Fh. the ear is carefully steadily syringed

by means of a hard rubber ear syringe, gradually increasing the temperature until restlessness is manifested, continuing the highest degree of heat that can be borne for a quarter of an hour or more. Speedy relief from pain is not only thus afforded, but inflammation abated; and it may be largely dissipated by renewal of the operation once or twice daily. Great relief may be had also by painting the drum membrane and aural canal with a four per cent. solution of brucine, which is generally advisable a few moments before resorting to the use of the speculum. Almost any good aural speculum answers the purpose of examining the ear of the dog, though my preferences are for the silvered glass modification of Wilde, its length over the silver speculum being a decided advantage, as well as its greater light-reflecting surface. The use of oils and caustics within the ear cannot be too strongly condemned; both produce untold miseries, the former by enforcing the opposite of cleanliness, encouraging accumulations, the latter by destroying healthy tissue; if caustics or astringents appear essential they should be applied only through the speculum by means of a brush, directly to the part, avoiding healthy surroundings. As a sedative and poultice, the hot water is unexcelled, and meets not only all the indications, but has the superior merit of cleanliness.

A vigorous cathartic rarely comes amiss at the outset of otic troubles, especially in mastoid abscess, even before operative procedures are instituted. One is rarely permitted to view a case of *otitis cellulosa* in which marked disturbance of general functions is not broadly defined, especially defective nutrition owing to non-assimilation and a circulation overburdened with poisonous and effete products. Indeed, a constitutional derangement may be at the bottom of the whole trouble. A mercurial—I record my preference for a *full* dose of calomel and colocynth comp.—followed by a saline, as sulphate of soda or magnesia, will prove most satisfactory; after which *quinine*, *iron*, *nux*, *ippecac*, *euonymin* *irisin*, etc., will have due value. The objections usually advanced against calomel disappear if a *full dose* is given; it is not a remedy to be dabbled with, or suitable to half-way measures, ten grains is none too much for a large-sized dog. A

preparation of iron that is most desirable is found in the *hydrated succinate of the per oxide*, as made by Stewart of Baltimore, as it is free from those disagreeables that usually pertain to ferric preparations, is tasteless, and, above all, easily soluble, and a *hepatic stimulant* as well as a general tonic.

When there is no discharge from the tympanum, and examination by means of reflected light (mirror and speculum) reveals a tense, bulging, drum membrane, the operation of *paracentesis tympani* should be performed without delay, immediately followed by the hot water douche. This not only relieves the inflamed cavity of its imprisoned fluids, but contributes not a little to the comfort of the animal. Neither is it a serious or difficult operation to one familiar with the anatomy of the parts, and Wilde's dart-like knife, with its bent or angular handle (made for this purpose), removes the only serious difficulty; it should be sharpened anew, however, for each operation. The objection that will sometimes be raised, that a drum membrane once perforated is ever after rendered unfit for its office, is utterly untenable, as well as that other bugbear, that it induces permanent *dysecæ*. The *membrana tympani* is frequently perforated and restored in man without the knowledge of the individual, and a permanent opening therein, unless with great loss of substance, does not necessarily result in loss of hearing. Certainly as much can be expected of the animal!

When the drum membrane gives promise of neither pus or mucus within the aural cavity, and paracentesis and other operative procedures are futile, a blister over the tender and painful portion of the mastoid will probably be of service, or in lieu of blisters, cupping and scarification may be tried. *Oleate of mercury* with *oleate aconitia* or *veratria*, equal parts, frequently answers every purpose of cantharidal collodion if persistently persevered in and well rubbed into the part; but Squibb's *oleates* alone have proved satisfactory in my hands, from the fact that others are not to be depended upon, owing to uncertain and varying strength.

When all else fails, resort must be had to the knife, making a free incision down to the bone, dividing its periosteal covering, selecting for the site of the operation the face of the mastoid promontory nearest the auricle. If pus yet fails to exhibit itself,

extend the opening through the outer plate of the mastoid, when compensatory results are almost certain to be obtained; even if pus does not appear, the operation will be followed by decided improvement. Of course any carious or necrosed bone should at once be removed, and as thoroughly as possible, and in all cases the wound must be kept open until pus ceases to flow or until all evidences of inflammation and disease have subsided.

A cartilage knife answers all purposes in making an incision through the bone, though a small chisel or gouge, if well kept under control, is equally satisfactory. The operation is not one of great moment, and an anæsthetic is not always necessary if the operator be at all skillful. For brief operations upon the dog a drachm of *ethyl bromide* answers every purpose and possesses the advantage of quick administration and recovery.

Regarding the excoriations of the external ear—the so-called “external canker,”—let me say such are commonly amenable to thorough and persistent cleanliness, time, and mild dressings. Their supposed malignant character is due to accumulations of foul material derived from the meatus, adhering to the hair, and setting up an irritation that becomes more virulent if the cause is not removed; moreover, the sluggish nourishment afforded the auricle is inimical to rapid repair. The ear may be confined for convenience and safety, but antiseptic cotton or oakum should be placed between the auricle and meatus to intercept the discharges.

A word regarding dietary. The popular works upon the dog are accustomed to deny animal foods in diseased conditions. A moment's consideration of the physiology of the alimentary apparatus is convincing that the creature is illy fitted for digesting easily or readily any other; to administer such other nourishment is to give a *stone* in lieu of *bread*; the same may be said also of so-called *beef teas*. Strong meat-broths should be the rule first, last, and always. In lieu of proper food supply being received, carbo-hydrates must be added, and even malt serves some purpose, though it does not have the same value as when administered to man. *Oleum morrhue* is excellent, though frequently but illy borne. There is nothing magical about cod-liver oil, it is

only an easily digested form of fat, without being the *best* fat by any manner of means. This must be a matter regulated to meet the requirements of the individual animal. Tonics, nourishing food, cleanliness, pure air and comfort, are the essentials in this as well as other diseases.

CASTRATION OF CRYPTORCHIDS.

BY M. JACOULET.

(Continued from page 361.)

The means employed for the removal of the testicle in ordinary operations of castration are not always available for application to the various cases of cryptorchidy. For example: if the operation is for either the inguinal or abdominal variety, the shortness of the cord may render the use of the straight or curved clamps quite impossible. Moreover, their application in abdominal cryptorchidy is more or less liable to cause an exaggerated traction of the cord, which may result in a hernia.

Mr. Dirieux and others apply a ligature to the cord, and either proceed to amputation at once, or depend upon the sloughing process for the final removal of the testicles. This method is often employed in preference to that of the clamps, but is liable to the objection of being inapplicable to some of the varieties of the abnormality. And, moreover, it involves the danger arising from the presence of a foreign body in the wound, and the consequent interference with the course of cicatrization. And, again, it may lead to an access of peritonitis, when, after the dropping of the testicle, the cord is retracted and draws with it into the abdomen the ligature which retains its contact with it.

For these reasons we prefer the method of direct division, as being of easier application and leaving no foreign body in the wound, and requiring no further surgical interference subsequent to the completion of the operation.

Of the operations of the first rank, we prefer that of crush-

ing with the Chassaignac ecraseur. However short the cord may be, so long as it reaches the inguinal interstice, and which is always the case, the chain may be easily applied above the testicle.

In place of the ecraseur, however, we sometimes employ the method of limited torsion, which presents nearly the same advantages. In performing this manipulation, the testicle being exposed by the division of the vaginal sheath when it exists as in inguinal cryptorchidy, or even if this condition does not exist, the section is made through the entire cord, or after the division of its posterior portion. It may be effected by using either the two forceps, as in ordinary castration, or one only, with which to perform the twisting while the limited torsion is secured with the hand.

Cauterization is another means of division of the cord, which we consider likely to give excellent results in the castration of cryptorchids.

An important question must now be determined in the problem, whether in a case of double abdominal cryptorchidy it is wise to operate on both sides on the same day? To this query we believe the answer must be in the negative. In the first place, it is not probable that it will be found practicable to bring out both testicles through the same opening, on account of the difficulty of finding the second, and the danger of eventration resulting from the process of searching for it.

And again, even supposing that the second testicle could be readily found and secured, the length of its cord would not be sufficient to admit of its being drawn down the inguinal interstice of the opposite side. And lastly, after the section of the cord, the retraction of its extremity in the abdomen would be likely to give rise to a bloody effusion and an inflammatory action, which would frequently end in peritonitis. And again, in perforating the two inguinal interstices, a hernia would most likely take place through the first perforation while the second operation was in progress, since necessarily there would be more danger of peritonitis from two peritoneal wounds than from one. We believe, therefore, that it is the course of prudence to wait until the

patient has recovered from the operation on one side before subjecting him to a second shock upon the other. This is the course we pursued in the only case of double abdominal cryptorchid which has come under our observation. But when the double inguinal is inguinal, or abdominal on one side and inguinal on the other, it is our custom to operate on both sides at the same time.

D.—*The Dressing.*—As complementary to the operation, Mr. Dirieux, whose method is that of the ligature without immediate amputation, applies the continued suture, which is removed on the third day, when the testicle is allowed to drop.

Mr. Paret, after simply dividing the cord and cauterizing the end, applies a dressing of oakum dipped in oil, which he pushes up to a distance of about five inches, and keeps in place with two stitches. This dressing is entirely removed after forty-eight hours.

Mr. Degive's advice is to leave the wound without dressing, unless eventration threatens, in which case he recommends the use of a padding of oakum, to be kept in place with sutures. This was done in thirteen cases previous to 1875, with quite a satisfactory degree of success.

We have ourselves discarded all dressings, and in so doing have done well. In one case, however, hernia appeared before the animal was left to get up, and although it was reduced, the animal died. We have since then had recourse to the following dressing: A ball of oakum, about the size of the fist, and oiled, is pushed to the entrance of the inguinal canal, between the edges of the inferior opening, but no further, and the scrotal skin is brought over it and kept in place by an interrupted quill suture, which is left in place forty-eight hours, after which period hernia is not to be feared. The dressing is then removed, in order to allow the escape of any discharge which may have accumulated. The object of this dressing is less to counteract the apprehended hernia, if it is otherwise disposed to occur, than to prevent the intestine from coming down outside of the wound if hernia should exist while the reduction is being made. Besides this the dressing will always serve as a preventive of hemorrhage.

VI.—*The care or nursing of the patient and contingent accidents involved in the Castration of Ridlings.*

In the case of inguinal cryptorchidy, the accidents and necessary attentions are similar to those which are attendant on ordinary cases of castration; but in the abdominal variety they are not the same.

On the completion of the operation, the animal is placed in a stall, with his bedding so arranged as to elevate the hind quarter, and remains thus secured for from twelve to twenty-four hours, in order to prevent his rolling in case of violent colics.

The application of a large mustard poultice is advised and recommended by many. We believe it is quite as well [and better—ED.] to dispense with this. The animal is to be well covered and placed in the most favorable atmospheric and hygienic conditions, and should be left quiet and subjected to severe dietetic regime, including a little hay, good straw and mashes. Mr. Degive gives one ounce of arnica daily. We have abandoned this practice, and recommend, instead, mucilaginous rectal injections, with a little nitrate of potash in the mashes.

The operation is followed by high fever, of several days' continuance, but which need not excite any alarm; it will generally subside after three or four days. The œdema of the sheath then becomes diminished, the hind quarter becomes less stiff, and suppuration is established; phenic acid washing is all that is now indicated. Towards the fifth, sixth or eighth day the food may be increased, and walking exercise may be ordered towards the twentieth. Complete recovery takes place in from thirty to forty days.

ACCIDENTS.—The contingent accidents chiefly to be apprehended are two: hernia and peritonitis.

1st. *Hernia*.—Generally the rupture immediately follows the operation, when the animal is allowed to get up, though it may also take place, after a violent effort, a few hours subsequent to the operation.

This is always due to the fact that the perforation of the inguinal intestine has been made too low, near the median line, or because the hand has been pushed through the fibres of the

small oblique while entering the abdomen. Degive says: "This complication is almost impossible if the internal opening of the artificial interstice is high up."

When this accident takes place, the animal must be thrown and secured, and operated upon by padding, or even the suture of the external inguinal ring.

Mr. Degive recommends this as very efficacious, and easy to apply, "by a curved needle being run through the crural arch and the anterior lip of the ring, in order to bring them together and completely close the principal hernial opening."

Both modes of reduction are effective, though we prefer the padding; but it must be understood that whichever method is employed, the case is always serious and likely to end fatally.

2d. *Peritonitis*.—We have not yet met with a case of peritonitis, excepting as the sequel of hernia. It may, however, take place, as it does in ordinary castration. Sinapisms, mercurial frictions, which are indicated as preventives, are, *à fortiori*, the proper modes of treatment. Mr. Dirieux has obtained good results from the use of oil of turpentine, both internally and externally.

We need say nothing here of tetanus or other complications which may follow any treatment. They offer nothing essential or special to the case, and we have not yet encountered them as associated with the subject in hand.

VETERINARY LEGISLATION.

By DR. WM. HERBERT LOWE,

State Veterinary Inspector, Paterson, New Jersey.

As there seems to be some difference of opinion among members of the profession as regards the affairs of the State Veterinary society and veterinary legislation, perhaps it would be well for me, as Secretary of the Veterinary Medical Association of New Jersey, to explain briefly how I stand personally in regard to this important subject. I regard it as a duty I owe to the veterinary surgeons of New Jersey. If my views are erroneous, and therefore conflict with those of the majority of the veterinary

graduates of New Jersey, they, my constituents, are in duty bound to nominate and elect a successor to me at the next annual meeting, which will take place in April, 1887. Until that date they will have to suffer for the mistakes they made at Long Branch, August 6, 1885, and confirmed at Morristown last April.

No one would more freely admit than I do that there are a few non-graduates in our State as worthy, and, if you please, more worthy than some graduates, yet I believe we have to draw a line of demarkation somewhere, and where shall we draw it if not between the graduate and the non-graduate. I believe that there are a few self-made veterinarians in the State that a license should be given to by the State society. This would give a few experienced practical men a legal opportunity to practice, but it should be stated plainly on their certificates that they are licenciates of the State society and not college graduates. But I do not believe that they should be admitted to regular membership in scientific societies.

There are several of the State veterinary societies, including the New York State Veterinary Society, that, in my opinion, are operating upon a wrong principle. I hold that we must have societies of graduates or societies of quacks. The moment we admit non-graduates into State societies and give them certificates testifying that they are worthy members, that moment we are lowering the standard of the regular profession, while we elevate and legalize quackery and empiricism.

It is poor encouragement for the young men of the profession, who have worked hard to graduate from a veterinary college, to find that they must recognize irregular practitioners as their peers. It is also poor encouragement for those about to enter college, if the quacks of the country are to be made legalized practitioners. The legislation may be such as to protect the future generation, but it is hardly justice to the present.

One reason why our society meetings are not better attended is that there are not a few of the graduates who do not approve of admitting non-graduates, however competent. I claim that no veterinary society will meet with permanent success unless it declares that no one can be admitted to membership unless he be a

graduate of a regularly chartered veterinary medical college. I am afraid that the United States Veterinary Medical Association is falling into the same mistakes as has befallen several of the State societies. I must confess I am surprised that President Dr. Liantard, for whom I have profound respect, would allow it, but no doubt the trouble lies to a great extent with the young men of the profession themselves. I am afraid that some among us judge the success of a society by the number of its members. I have been present on several occasions when the United States Veterinary Medical Association met, and no paper of profitable merit was read, and no profitable discussion indulged in. The same thing is only too true of some of the meetings of the State societies. It is poor encouragement for veterinarians who are actively engaged in practice to leave their business to attend a veterinary meeting and there find that what I have said to be true. It is impossible for educated veterinarians to discuss scientific subjects with ignorant "horse doctors."

At the last regular meeting of the New Jersey State Veterinary Society held last August at Long Branch, I was appointed on the Legislation Committee ex-officio, by our worthy President, Dr. Wm. B. E. Miller, of Camden. Now no one would like to see a proper veterinary bill passed by the State of New Jersey Legislature better than I would, but who would not rather have one than one legalizing the quacks of New Jersey? As I understand the bill recently passed by the New York State Legislature, this is just what that State has accomplished, at least as far as the present generation is concerned. I consider this is not so good as none at all. Before the bill was passed a quack was a quack, and a graduate a graduate, but now all the quacks that have conformed with certain immaterial requirements have become legalized practitioners of veterinary medicine and surgery, and are placed on an equality with the graduates of our veterinary schools. These *legalized* practitioners take special pains to inform the public that they are "registered veterinary surgeons," and display certificates in an unbecoming manner.

Although this New York State law has been in effect only a few months, yet the ill effects have already been felt by many of

the young graduates. A young professional friend of mine told me a few evenings ago, at my request, how the new law had affected him personally. The gentleman I refer to graduated from the American Veterinary College in 1884, and located not a great distance from the metropolis. As a matter of necessity he has been obliged recently to meet in consultation one of these irregular practitioners, who behaved toward him in a very unbecoming manner, to say nothing of the medical ignorance displayed. This ignoramus is a *legalized* "registered veterinary surgeon," he having complied with certain requirements of the recent Act of the New York State Legislature. It seems to me this is a great imposition upon the public, as well as upon the educated doctor. The legislative Act in question, puts the college graduate of the nineteenth century and the illiterate, uneducated "horse doctor" on an equal footing, while it protects a generation of veterinarians yet unborn. In my opinion we are far better off here in New Jersey without any legislation on the subject, than are the people of New York State with the Act now in existence.

HOG CHOLERA, OR SWINE PLAGUE.

FIRST REPORT OF THE WORK OF DR. BILLINGS UPON SWINE PLAGUE.

By THOMAS BOWHILL, M.R.C.V.S., Temporarily Assistant at the Experiment Station for the Study of Contagious Animal Diseases,
University of Nebraska.

(Read before the Illinois State Veterinary Association at the Convention of the Stock Growers of the United States, Chicago, Ill., November 11, 1886.)

* * * * *

The swine plague has not been so prevalent or so severe in Nebraska during the past summer or fall as during preceding years. The doctor thinks that the severe weather of last winter and the extreme wet, cold spring and early summer must have exerted some mitigating influence on the virulent activity of the micro-organism of swine plague. Dr. Holcombe, of Kansas, reports the same favorable condition with regard to swine plague

that State. On account of lack of funds, Dr. Billings has been largely limited in his work to outbreaks in the vicinity of Lincoln, though he has made several trips of 100 miles or more into different parts of the State. The first case of swine plague that came under his notice occurred in swine belonging to Mr. W——, who lives about nine miles west of Lincoln. He had but a few cases, and these took a slow and chronic course. The doctor killed one of the animals, and on making an autopsy found the characteristic lesions of swine plague. The spleen was at once removed and placed in a sterilized bottle and taken home, and numerous agar. agar. tubes inoculated, in each of which developed one form of micro-organismal life. As soon as possible, a number of hogs were inoculated with these cultures, each of which died in the course of eight to fifteen days with unmistakable lesions of the disease. Cultivations from the spleen of these animals gave the same micro-organism as was found in the first instance. They were also found in the tissue of the intestine and other organs, and have since been found in every case of swine plague that has come under our notice.

Since I have been with the doctor, and after I had become acquainted with the method of staining micro-organisms, I have done most of this work that has been done in the laboratory, and have succeeded in demonstrating the presence of the micro-organism in effusions in the abdominal and thoracic cavities, in the blood, in the spleen, kidneys, liver and lungs. This organism is oval in shape and very minute, requiring a one-twentieth of an inch oil immersion lens to demonstrate it properly. It appears to correspond in its morphological and staining characteristics, as well as in various biological phenomena—that is, in its growth on agar. agar. or gelatine and on potatoes—to the one discovered and described by Prof. Shutz, the accomplished pathologist of the Berlin veterinary school, though there are several clinical, experimental and microscopical points of differentiation in the disease, which make us inclined to doubt that the two micro-organisms are etiologically identical; that described by Shutz seems to be more virulent than the one we have been working with in Nebraska during the past year; this may perhaps be due to the

afore-mentioned mitigating causes, and remains to be determined hereafter. On the other hand, Schutz claims that the German swine plague is an infectious pneumonia, and does not mention, in the few autopsies which he reports, the ulcerated condition of the large intestine ("especially") and the peculiar circumscribed indurations which are so frequently met with in American hogs.

In the majority of our cases, and especially in very acute or severe ones (a characteristic autopsy of which will soon follow), the microscopical phenomena most certainly justify Dr. Klein's conclusion, that the disease in American, as in English hogs, is a pneumo-enteritis, though both in infection, under natural or experimental conditions, we meet with in cases in which the lesions are limited, more expressly to one than to the other of these complications. This micro-organism, as aforesaid, is an oval body, and hence, according to Koch, a bacterium—who classifies the pathogenic bacteriæ into (a) bacilli or rods, (b) cocci or round bodies; (c) bacteriæ or oval bodies. This bacteria colors best in methyl violet, though also with gentian violet, methylen green and fuchsin, though not so satisfactorily. Its protoplasm seems to be differentiated into two chemically different substances; for, when not allowed to remain too long in the coloring fluid, the poles, or ends of the bacteria, assume a dark color, separated by an uncolored band of substance; the colored plasma extends along the peripheries of the organism in a fine line uniting at the poles; this exactly corresponds to the description given by Prof. Schutz (see the Report of the Imperial Board of Health of Germany, 1886, page 381), who says: "If the bacteria are colored in a solution of gentian violet, they show in their central part an uncolored space surrounded by a blue colored line; the quantity of this colored mass is greater at the poles, so that the ends appear more strongly colored; they appear of a homogenous blue," when intensely colored. I think it well to mention that the coloring power of the solutions is much increased by adding the necessary quantity of a saturated alcoholic solution of the coloring fluid to a little more than equal parts of a solution of caustic potash, one to ten thousand of water. This organism offers some very puzzling biological conditions

to the eye of the observer; for, in studying its development with colored preparations from cultures, under the microscope, the observer will often see objects strongly resembling micrococci in appearance; more careful observations, however, will show that this is simply a stage in the development of this organism, and very careful observation will show that the cocci-appearing objects invariably have an ovoid form, though not so well marked as in mature bacteria. They proliferate with fearful rapidity. The first phenomenon seen is that the object increases in length and somewhat in breadth. The uncolored substance which appears to be a secretion of the poles, although the contrary may be the case, becoming more plentiful; when first one and then the other pole end, or colored substance, is separated, leaving two of the cocci-like objects as fine bodies in the culture; these are at first small, but rapidly increase in size, so that in the same field one has an appearance which would lead him to think, in colored specimens, that the culture had become polluted, unless he had seen the organism develop under the microscope in what is known as a "hanging drop," which is prepared as follows: Take an object glass that has a hollow chamber ground out of it, surround this chamber with a thin layer of vaseline; then take a clean sterilized covering glass and place in the middle of it a drop of sterilized beef infusion, or bullion, which is inoculated from any culture; the covering glass is now to be carefully turned over and placed upon the object glass so that the drop is in the middle of the excavation; it is then to be pressed down upon the covering glass, the vaseline making an impervious cavity, so that germs from the air cannot get in and evaporation does not take place.

When inoculated in beef infusion gelatine, which is prepared as follows: Fresh lean beef, 250 grammes; to this add 500 grammes of distilled water; place in a cool place for twenty-four hours, then strain off until you get 400 grammes of fluid, to which add ten per cent. of gelatine of the best quality, one per cent. peptone, one-half per cent. cooking salt, cook until the albumen is entirely precipitated, then neutralize to a slightly alkaline reaction, then strain off into sterilized test-tubes plugged

with sterilized cotton, fill tubes about one-third, sterilize this mass once more by heat, using care, or the stiffening power of the gelatine will be destroyed. Agar. agar. is prepared in a similar manner, one and not over two per cent. being substituted for the gelatine. Agar. agar. makes a gelatine that can be used at any ordinary heat of summer without becoming fluid, whilst gelatine melts between twenty-five and thirty degrees cent. It is also of no use to increase the quantity of gelatine, as by doing so you do not get a proper development of the bacteria. Inoculations of these bacteria in gelatine gave peculiar colony-like developments, somewhat resembling knots on a fine piece of thread, and not causing fluidification. There is nothing peculiar regarding their growth in agar. agar. When grown upon potatoes the culture is of a chromogenic nature, and becomes about the color of coffee when good cream has been added to it.

Since 1878 an almost continued series of investigations into the cause and nature of hog cholera have been made under the auspices of the agricultural department of the United States, which are to be found in its reports. The first of these were made by Messrs. Law and Detmers. Law seemed to have considered the disease to be due to a micro-coccus, quoting Klein in the following language, in the report of 1878: "Klein, who in 1877, cultivated a micrococcus for seven successive generations and finally inoculated the fifth and seventh generations successfully on two pigs, seems to have established that these microphytes are the ultimate cause of the disease." Detmers, in the same report, seems to have thought that a bacillus was the cause of American swine plague, to which he gave the name of "bacillus suis," which he says "are found invariably either in one form or another in all fluids, in morbidly affected tissues and in the excrements (?) and constitute beyond doubt the infectious principle or produce the morbid processes if transmitted directly or indirectly from a diseased animal to a healthy one." It is singular that both of these authorities should have received what appeared to be equally positive and confirmative results from two such entirely different organisms. The work of Law and Dr. Detmers is, however, entirely eclipsed by that of Dr. Salmon, who also

made his first report to the commissioners of agriculture at the same time (1878), and who has been engaged upon a more or less continued series of investigations for the agricultural department, upon this disease, which have been published in its annual reports ever since.

With Law, Salmon seems to have looked upon a micrococcus as the cause of this disease, up to the year 1885, and to have received experimental testimony, which justified him in saying: *Surely we have here sufficient evidence that a reliable vaccine might easily be prepared if we carry our investigations a little way further.* Page 57, report of 1883, in another place, the same authority says of this micrococcus that *these experiments were made and accounts of them published in advance of those of M. Pasteur, and the evidence furnished was all that could reasonably be required to decide a scientific question of this kind.* In the report of 1884, page 229, he (Dr. Salmon) enters into a polemic against Dr. Klein of England, who had discarded his micrococcus in favor of a bacillus, and then says: *A large number of observations similar to the above have been made, and in all cases, where a pure cultivation has been obtained, the organism which multiplied was a micrococcus, and when the virulence of such cultivated micrococci has been tested by inoculation experiments, typical cases of some plague have resulted.* Any one who carefully reads these reports which Dr. Salmon has made in regard to his experiments with this micrococcus, would certainly be led to the conclusion that "the evidence furnished was all that reasonably could be required to decide a scientific question of this kind," but alas, it does not seem to have brought Dr. Salmon even to any decisive conclusion, for in his report of 1885, page 785, he seems to have had some doubt about the correctness of this testimony, and that the scientific question had not yet been decided by him. Here he tells us that he was *perplexed by contradictory results, and failing to obtain any pathogenic germ by isolating the different forms found in peritoneal effusions.* *The discovery of a fine bacillus in Germany causing a disease in some which was regarded as identical with swine plague in England and the United States attracted our attention.* It is difficult to see why Dr.

Salmon should have become so suddenly perplexed in the face of the "evidence furnished by him which was all that could reasonably be required to decide a scientific question of this kind;" and which was apparently backed up by the most positive inoculation experiments.

But alas for mortal frailty, in the report of 1885, we are surprised at finding that Dr. Salmon no longer considers his micrococcus to have any important etiological connection with swine plague. He says on page 219, report of 1885, that in at least twenty-five cases of undoubted swine plague, pieces of splenic tissue, when spread out in a thin layer on a cover glass, dried and stained in some aniline color, *were found to contain the same microbe in greater or less abundance, and calls attention to an illustration which he has marked plate III, figure 1, when stained for one or two minutes in an aqueous solution of methyl violet, and examined with a Zeiss one-eighteenth homogeneous lens, they appear as elongated ovals, chiefly in pairs; the greater number present a center paler than the periphery. This may be due to a greater density or standing capacity of the peripheral portion. The darker portion is not localized at the two extremities as in the bacteria of septicemia of rabbits, but is of uniform width round the entire circumference of the oval.* Dr. Salmon gives exactly the same kind of experimental evidence which he furnished in previous years for the etiological connection of his micrococcus of these years with swine plague.

It may also be assumed that he has this time "furnished evidence which is all that could reasonably be required to decide a scientific question of this kind." It is also surprising that Dr. Salmon's description of the manner in which this microbe of his develops in gelatine, and on potatoes, exactly corresponds to the above of Dr. Billings. On page 215, report of 1885, Dr. Salmon says: "The bacteria manifests growth (on potatoes) by first staining the cut surface of the potato at the place of inoculation with a chocolate color," which Dr. Billings thinks corresponds near enough to our coffee color. He also gives a description of its growth in gelatine, on page 214, report of 1885, which exactly corresponds to that I have given above for Dr. Billings, which

Prof. Schutz gives for that found in Germany, and illustrates it with plates, which show a very marked resemblance to those of the cultures of Dr. Billings.

The description which Dr. Salmon gives of the manner in which this new microbe reacts against coloring matter does not correspond to any known variety of bacteria or cocci, but to spores, and I must therefore conclude that he has not yet given satisfactory evidence as to its etiological connection with American swine plague for the bacteria which I have myself colored in the effusions, blood and tissues of undoubted cases of swine plague, under Dr. Billings' directions—(some specimens of which I have the pleasure of laying before you and which will undoubtedly convince you of their nature) *invariably colored at both poles, with a clear centre in the body of the bacteria, and a blue line of connection along the periphery.* As I have previously said, I have never failed to find this bacteria in every case. As we nearly always killed the animals I found them in the spleen, kidneys and lymphatic glands in an absolutely pure condition. In some few cases where the animals had been dead some few hours, but where the autopsies were made early in the morning, before heat had time to set up decomposition of the carcasses, and the animals had died during the night, I found a few cocci and bacterium of putrefaction also present, but the genuine bacteria always predominated.

In England, Prof. Walley recently read a paper on swine plague, before the third annual meeting of the National Veterinary Association of England. I agree with him as to the term swine plague being the most descriptive and technical designation for the disease. On the other hand I must object to his definition by which he describes the disease as a "specific eruptive fever" peculiar to the pig, because there is no such thing as a specific fever that has lesions produced only by the rise of temperature, fever being but a symptom which accompanies, to a greater or less degree, nearly all irritative disturbances in the animal organism. This practice, not only in veterinary but human medicine, of describing diseases as fevers simply because they are accompanied by a rise in temperature, is and has been a great

injury to students, tending to mislead them from a true conception of the pathological essentials in disease. The disease which comes nearest to being an exception to the above is febris-intermittens, commonly known as fever and ague; but it has its specific symptoms, which, while accompanied by a fever having nothing to do with it, are dependent upon the presence and action of a known germ (the Spirocheton Obermeiri) in the organism. Tetanus is another disease that is accompanied by fever, but has its specific phenomena by which we know it. Swine plague proper, as I have seen it in America, is by no means an eruptive disease, if by eruption Prof. Walley means skin complications. The peculiar discoloration of the skin is due more to disturbances of the circulation and stasis than anything else, though it may be that embolism, due to the micro-organism, plays some part in it, especially as the phenomena seen would seem to indicate that these discolorations are due either to interferences of the circulation in the arterioles or a venous reflux—the vis a fronti being interfered with especially, as I find the myocardium in all cases in a condition of degeneratio adiposa (myo-malacia). It seems somewhat singular that when such eminent authorities in England as Klein, Axe and others, have been working so many years (since 1876) on swine plague, that they should not have been able to discover the true micro-organism. It is also singular that Prof. Walley should have made no mention of any other work done in America than that of Prof Law, and have neglected to mention that of Detmers and Salmon, especially that of Detmers, for, pathologically considered, it gives the best descriptions of lesions of swine plague and its clinical variations that have yet appeared. Dr. Billings' experiments go to prove the correctness of Walley's conclusions in regard to abortion, *as the micro-organism has been found in both the amniotic and spleen of fœti where the mother has recently died and the young were dead.*

Prof. Walley's description of the lesions in the kidneys is very meagre, as shown in the autopsy quoted, as in every case which we have seen, the disease is characterized by swollen kidneys and an excessive degree of parenchymatous inflammation. But his description of the hemorrhage into Bowman's capsule, or exces-

ive congestion of the malpighian tufts, is quite accurate, as it has been frequently seen here. His remark that pulmonary lesions are not very constant or necessary, does not correspond to the experience of Detmers or Billings in America.

In an outbreak among seventy-five hogs, which has been placed at the disposal of Dr. Billings, the pulmonary lesions have far exceeded in intensity those of the intestines; the latter, with the exception of capillary congestion and the swelling of the mucosa, with more or less intestinal catarrh, which in some cases was entirely missed in the large intestines, have been entirely wanting in ten autopsies thus far made, the animals having died of œdema pulmonum. The pneumonia in hogs so far as we have seen it here, has been of a bronchial character, leading to caseation, and in some cases to necrosis; hemorrhage infarctions are frequent. It seldom happens that the intestinal tissue becomes complicated by indurated process, unless it be in very chronic cases; in general those tissues are reddened and swollen.

Our necroscopical observations in the above outbreak do not go to confirm Walley's assertion that "as a rule the fœces are either semi-solid or of a liquid consistency, as constipation has not only been remarked in this outbreak throughout, but in many others. When the intestinal lesions predominate, diarrhœa is undoubtedly present. His description of the mottled appearance of the lymphatic glands, which he compares to "the appearance of a 'queen's strawberry,'" was also met with by us in severe cases.

Mr. Archibald Robinson's remarks in the discussion on Prof. Walley's paper "that in the district of Baden, Germany, inoculation has been successfully carried out," show that he does not know what disease the Baden investigations had to do with, or else has a very poor knowledge of German. The Baden investigations were made by Drs. Lydtin and Schotellius in regard to the protective powers of M. Pasteur's "vaccine contre rouget," which is the same disease as the German "rothlauf" or erysipelas of swine, a disease which has no pathological or etiological connection with the swine plague in Germany, England or America. The micro-organism of this disease being a bacillus or rod-bacteria, while that of swine plague in both Germany and America is an oval body.

(To be continued.)

REPORTS OF CASES.

LARGE FIBROUS TUMOR IN RECTUM—REMOVAL—RECOVERY.

BY W. H. GRIBBLE, D.V.S.

A valuable trotting-bred gelding, one and a half years old, had been treated by an empiric some time for malarial trouble, but with no success.

On our being called, the owner informed us that it had not been doing well for several weeks, seeming stiff in the loins and unable to lift its hind feet up properly; also that the act of defecation was accomplished with much trouble, being accompanied with pain, straining, groaning, etc., these symptoms varying in intensity according to the state of the fœces, being worse when costive than when loose.

On examination, temperature, pulse and respiration were found normal, but while watching him he undertook to empty the rectum, when he strained most terribly, a dung ball or two at a time being passed with considerable force.

These actions led us to suspect some interference with the normal size of the rectum; so, after an enema of warm water, we immediately made an examination with the following results:

On the median line, directly under the sacrum and between it and the rectum, we felt a hard mass, somewhat rounding, slightly movable, and in size about seven inches long, five inches wide, and three inches thick.

We diagnosed it a fibrous tumor, which from its size caused the symptoms mentioned by being an obstruction to half or more of the diameter of rectum.

After our explaining the case, the owner left the matter of treatment entirely to us, being positive from the actions of his colt that the tumor had been growing quite rapidly of late and would soon cause the animal's death.

We ordered oleum lini Oss twice daily for two days, together with soft food and frequent enemas; then we removed the growth, accomplishing our object much easier than we had anticipated.

The animal was placed in a narrow stall and kept close to one side by means of a pole; several enemas of hot water were used

or the purpose of cleansing and expanding the rectum ; then entering this organ with a concealed bistoury in hand, an incision was made the whole length of the inferior border of foreign growth, when it was quite easily separated from the surrounding issues with the fingers, until reaching the anterior superior portion, where it seemed to continue anteriorly in a strong fibrous cord, in which we could plainly feel the pulsating of an artery.

Passing a looped wire around this cord, an assistant applied sufficient traction to hold it steady, when the ecraseur was applied and the whole mass removed, which weighed two pounds. Three days after the operation the colt was doing well.

The operation of circling the cord with the ecraseur chain was not as easily done as may be supposed, taking us more than an hour, as the growth was too large to pass through the loop of the chain, making it necessary to put the instrument together wholly within the rectum, and to do this with one hand. Since the operation I have thought it might have been done easier and quicker by having a strong wire pass through a piece of small gas pipe, twisting the wire at outer end by means of a bolt and wrenchers.

FRACTURE OF THE TRACHEA.

BY GEO. L. WARNER, D.V.S.

I send an account of a very rare and interesting case brought to my notice on September 30th, 1886, which I hope you will kindly insert in the REVIEW. The particulars of the case are as follows :

On the above-mentioned date there was brought to the New York Veterinary Hospital a bay mare, twelve years old, for examination as to glanders. A slight nasal discharge gave the owner an idea that said disease existed. However, upon careful scrutiny, I failed to find any such evidence, and certified to that effect. The owner thereupon recited a series of symptoms that to me were puzzling, pointing only to some respiratory obstruction, inclining slightly to an existing polypus. The symptoms quoted were as follows : Upon buying the mare, he placed a boy upon her and directed her to be ridden to the Jersey City ferry.

When walked about 100 yards, there appeared a difficulty in the animal's breathing; she immediately became greatly distressed, and came very near falling; he then directed the boy to lead the mare to this place, which was done.

I had the animal trotted up and down the block four times, without producing any of the above-mentioned symptoms; but upon having her ridden, the urgent dyspnœa presented itself, along with a flow of blood from both nostrils and mouth. I had the animal returned, and then found the very rare condition—a fracture of the trachea; midway in its length the edges of the fractured tube were partly everted and partly inverted, and far apart; in extent it was about four inches. Pressure upon the skin over the opening produced symptoms similar to those shown when the animal was ridden. I believe this to be a very rare occurrence, and can find no account of the same in the veterinary works I possess.

In the treatment I could do little, on account of its low situation. If it had been higher up I might have inserted a tube with probable good results, but as it was, I advised the owner, should he retain the mare, to drive her with the head in as nearly the natural position as possible, using the martingale to accomplish it.

I have since heard nothing as to what benefit was derived from the above suggestion, nor do I place much stress upon it. My sole object in sending you this was to find if there had been any similar case recorded, trusting it will be of interest to the younger members of the profession.

PECULIAR CONDITIONS FOUND IN THE UTERUS OF A MARE THAT DIED FROM PLEURO-PNEUMONIA.

By A. C. YOUNG, D.V.S.

I have long intended writing you, but a doubt of its acceptability, and having little or nothing of interest to write about, it has been postponed until the discovery of the following remarkable case.

I give the history in its entirety, and ask your opinion, as a

number of my M.D. friends have taken issue with me in regard to it. The case is as follows :

A Mr. Pendleton residing in this city owned a very fine mare, used for breeding purposes, whose colts have always been at a premium. She has had altogether ten foals. In the latter part of April, 1885, she was covered by a pacing horse here, and, though tried several times after, she refused him, as she has invariably done, with the exception of two foals out of the ten; this sign being always conclusive with her owner of pregnancy. Though they have tried her several times, at regular intervals, in every case she would refuse the horse.

After being covered in April, the mare was allowed to run in a small pasture of four or five acres, adjoining the house of a stock-man in the country. There were two other mares in the paddock, all having colts at their sides; consequently considerable kicking occurred between them. Mr. Pendleton saw the mare at different times during the summer, and during the latter part of September noticed the animal seemed unwell; she was shrunk at the hips, coat staring, and losing flesh. He was convinced the mare had aborted, though the man in charge seeing her a number of times each day, had never found evidence of it, nor could they find any, though the pasture was small and neither hogs nor dogs are kept at or near the farm.

The man in charge did not think abortion had occurred, but that she was in estrus, so the mare was again taken to the horse, but she refused him. After taking her back to the paddock, it was believed a horse used as a teaser got loose and covered her, though the evidence on this point is not conclusive.

The same month, September, she was taken by up her owner, stabled and clothed all winter, but seemed to get little better. The latter part of March, 1886, she was again put to the horse, was covered, and nine days after was covered again; refused him several times after, and seemed to get better somewhat, until the fore part of June, when she grew worse and continued so up to the time of her death, which occurred October 17-18.

I was called to see the animal in July of 1886, but was unable to find a cause as to her sickness. She was debilitated, run down

in flesh, and evinced pain on being moved; there was a paleness of the visible mucous membrane; respiration slightly increased, which latter I attributed to the distention of the abdomen pressing against the diaphragm. Iron, nucis vomicæ and gentianæ were prescribed, but was told afterward they produced little change for the better.

I was again called on October 17th, as her owner felt sure she was about to die. On examination, pneumonia of the right lung, complicated by pleurisy, was the diagnosis. Her functions were, temperature, $101\frac{3}{4}^{\circ}$; pulse, 96; respiration, 42. No treatment was ordered as her owner was away, and during the night the animal died.

At the request of Mr. Pendleton a post-mortem was held, to determine whether the mare was with foal, as it would decide if he could recover the \$50.00 service fee of the horse.

On opening the thoracic cavity the condition of the right lung, pleuritic adhesions and the enormous effusion, confirmed the diagnosis which had been made. The uterus was next examined; the ovaries, fallopian tubes and horns, were in a normal condition; and on making an incision into the uterus, a fine large foal was discovered, enclosed in its membrane, healthy in every way, and evidently dead but a short time; this foetus was six and a half months old. After removing it from the placenta, a black mass still remained in the uterus, which set me conjecturing, ere removing it, as to what abnormality could exist in this location. I removed the mass, incised the soot-colored membrane, and found a perfectly mummified foetus, also of a soot color, well developed, except the frontal bone. Hoofs well formed; hair on eyelids and upper and lower lips; length, from occipital bone to root of tail, thirteen to fourteen inches; eyes badly shrunk, nothing remaining but the lids covering the openings.

According to Fleming, the foetus is fourteen to twenty-two weeks old. I have both foetuses in specimen jars, and were it not such a long way to New York, your museum should have them, provided you considered the case sufficiently interesting.

The mare at the time of her death was fifteen years old, never sick a day in her life, except a touch of pink-eye, the form of influenza which was so prevalent here at one time.

Now the rock on which some of my M.D. friends and myself split, is this: they contend it is a case of twins, with the death of one, while I think the mare never aborted during 1885, but carried this mummification in one of the horns of the uterine up to the time of death, and that the contamination produced death. My entire belief is based upon the history of the case as obtained from her owner, and which I have given you to the best of my ability. Mr. Pendleton is a thoroughly reliable man, shrewd on the questions of horseflesh, and one who immediately notices any change in the health of his animals.

CLIPPINGS FROM MEDICAL PAPERS.

DO LOWER ANIMALS HAVE TYPHOID FEVER?

For many years it was contended that the so-called pig-typhoid, or, as it is now known, infections pneumoenteritis, was identical with typhoid. French veterinarians have also claimed that horses suffered from human typhoid fever; but the swine-plague has been found to be a distinct disorder, and the question whether the horse can have typhoid is still unsettled.

Recently, however, Dr. J. Bland Sutton (*Journal of Comparative Medicine*,) brings forward evidence to show that monkeys, tigers, and beavers may have enteric fever.

In 1839 M. Raper describes an epidemic of this disease which broke out among the monkeys in the menagerie of the Muséum d'Histoire Naturelle, Paris. On this occasion M. Serres, who had previously observed the affection in monkeys, dogs, and cats, and had made careful preparations of the intestinal lesions, was able to make careful observations on the animals during life. The symptoms were very striking, being diarrhoea, increased frequency of pulse, and fever ending almost always in death.

Dr. Bland describes cases of typhoid fever which he observed, in 1822, among the monkeys of the London Zoological Gardens.

While making a post-mortem examination on a lemur which

had died in the Zoological Gardens, from perforation of the ileum near the cæcum, the Peyer's patches were found to be ulcerated in the same manner, and presented the typical appearance as these structures do under the same condition in man. No other organ presented lesions of note. For some days before death the lemur had suffered from profuse diarrhœa, the keeper experiencing considerable difficulty in keeping the cage clean. Dr. Bland was so positive that the ulcerations were typhoid that the death of other monkeys were predicted.

Seven days later another monkey, which had lived in the cage with the first, died with the same symptoms and lesions; later, two other monkeys and a tiger died of the same disease. At the time these cases occurred typhoid fever was raging in the neighboring district.

In 1885 the Zoological Gardens received an instalment of six Canadian beavers. Four of these died with a disease lasting about six weeks, and characterized by disinclination to food and profuse diarrhœa. On post-mortem examination ulcerations of Peyer's patches were discovered.

Dr. W. L. Conklin, Superintendent of Central Park Menagerie, reports a case of apparent typhoid occurring recently in a monkey. The animal had suffered from diarrhœa and hemorrhages from the bowels, and an autopsy showed extensive ulcerations of Peyer's patches. Dr. Bland states that the utmost care was taken to exclude the question of tuberculosis.

Experiments with cultures of the typhoid bacillus have, it is believed, resulted in producing a disease allied to, or identical with, typhoid in the rabbit and guinea-pig, although here experimenters differ.

There is, however, more or less evidence that typhoid fever can affect not only man, but the quadrumane—the tiger, cat, and dog, the guinea-pig and rabbit, and possibly the horse.

The importance of this fact, if established, is twofold: It makes it possible to study the disease more systematically, and to apply to it experimental methods; again if our menageries and our stables can breed the typhoid poison, it is a matter of the highest importance that this should be known.—*Medical Record*.

THE PASTEUR INSTITUTE.

It is well known that several deaths have happened of persons who have undergone M. Pasteur's method of protective inoculation for rabies or were still undergoing the process, and it is no more than natural that each succeeding death should have had effects in undermining the confidence that had come to be felt in the system. Looking at the precise facts, however, we may still cherish the feeling that a great triumph has been set on foot not already accomplished.

On the 5th of this month, as we learn from the "*Gazette hebdomadaire de médecine et de chirurgie*," the Paris *Conseil municipal* ceded to the society of the *Institut Pasteur*, by a vote of thirty-three to fourteen, for a period of ninety-nine years, the land that had previously been allotted to it for thirty years only.

In the course of a discussion that preceded the vote, a statistical statement was furnished giving the results thus far accomplished. The whole number of persons treated amounted to 656, of whom 15 had died; 1,009 of these persons belong in France, and 3 of them died; 182 (including 50 bitten by rabid wolves) came from Russia, and 11 of them died (3 after dog-bites and 8 after wolf-bites); 20 from Roumania, of whom 1 died; and 59 from England, 17 from Austria, 74 from Algeria, 18 from America, 2 from Brazil, 42 from Belgium, 58 from Spain, 1 from Greece, 8 from Holland, 25 from Hungary, 105 from Italy, 20 from Portugal, 2 from Turkey, and 2 from Switzerland, one of whom died.

Including the cases of persons bitten by rabid wolves, who furnish more than half the deaths, the total mortality amounts, therefore, to less than one per cent. Surely this is most encouraging. It will scarcely be maintained that any such proportion of immunity would have followed in the natural course of things, at least among those who do not utterly deny the existence of rabies as a specific disease; and the objection that time enough has not elapsed to enable us to judge of the fate of the bitten persons, in view of the long incubation popularly ascribed to the disease, is fast losing its force, for some of the cases date

back now more than a year. Even if we were to concede the non-existence of rabies, and accept the view that those who are supposed to die of it really perish from fright, M. Pasteur would still be entitled to the gratitude of mankind for having saved 1, 641 persons from dying of fright.—*N. Y. Med. Journal*.

RECENT EXPERIMENTS WITH PASTEUR'S INOCULATION
METHOD IN VIENNA.

Some time ago Dr. Ullmann, of Vienna, went to Paris and studied Pasteur's method of preventive inoculation for rabies. He brought virus and all the necessary materials for establishing a laboratory in Vienna, and the work of manufacturing the rabbit's cords has been successfully going on. He finally undertook preventive inoculations upon men, and up to a recent date had operated upon sixty-one persons supposed to have been bitten by rabid dogs, so far without a death.

As an offset to these practical results, Professor v. Fritsch has been making some experiments, which appear to show that the Pasteur method is inefficient upon persons who have, beyond any doubt, received the virus into the system.

He took sixteen rabbits and, having trepanned them, inserted the rabic virus directly beneath the membranes. He then began at once to perform the preventive inoculations, as done by Pasteur. Despite these, every one of the rabbits died of hydrophobia, as was shown by inoculating other healthy rabbits with bits of the medulla of the dead animals. Another series of rabbits, for a control experiment, was trepanned and inoculated, but did not subsequently receive preventive inoculations. These also all died. A second series of experiments was performed with similar results, except that one rabbit did survive. A similar experiment with a similar result was performed upon five dogs.

Thus it seems that in cases in which the virus is, beyond all question, deposited in the nervous system, the results of preventive inoculations are *nil*. But it must be admitted that Professor Fritsch's tests were very severe, and it cannot be said that they prove that the preventive inoculations are futile when the virus is only deposited in the superficial soft tissues of the body.
—*Medical Record*.

REVIEWS AND NOTICES.

VETERINARY PHARMACOPŒIA. By George Greswell. (Bailliere, Tindall & Cox, London).

We have on several occasions called the attention of our readers to the writings of Dr. G. Greswell, and it is once again our pleasure to bring before the profession this new work, which comes to make a good addition to the library of veterinarians. Since the works of Gamgee, Tuson and Morton, which we believe are now out of print, there has been no book in veterinary pharmacopœia which is so complete as the book now published by Bailliere, Tindall & Cox. Deprived of all useless material, (treatise of diseases) as it is, and essentially treating only of the medicines used by the veterinarians, with their composition, nature, compounds, effects, doses, etc., the book no doubt supplies a want much felt, and deserves all the success that a good and useful work is entitled to.

LINDSAY & BLACKISTON'S PHYSICIANS' VISITING LIST, for 1887.

This work is once again before us. It is well fitted for veterinary practitioners; in fact it is the only one which has for many years proved satisfactory in our own use.

ANNUAL MEETING U. S. V. M. A.

LIST OF OFFICERS AND COMMITTEES OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION, FOR 1886-'87.

President, A. Liautard, M.D., V.S., 141 West 54th Street, N. Y. *Vice-President*, Wm. Zuill, M.D.D.V.S., 1526 Race Street Phila. *Secretary*, Ch. B. Michener, D.V.S. 349 West 35th Street, N. Y. *Treasurer*, Jas. L. Robertson, M.D., D.V.S., 409 Ninth Avenue, N. Y.

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Ross, D.V.S., 278 Elm St., New Haven, Conn. Fred. H. Osgood, M.R.C.V.S., Springfield, Mass.

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Committee on Diseases.—Wm. Zuill, M.D., V.S., *Chairman*, 1526 Race St. Phila. J. F. Winchester, D.V.S., Lawrence, Mass. J. C. Myers, Jr., M.D., D.V.S., 379 Walnut St., Cin., O. M. R. Trumbower, D.V.S., Sterling, Ills. W. H. Pendry, D.V.S., 343 Union St., Brooklyn, N. Y.

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H. Bailey, D.V. S., Maine. H. J. Detmers, D.V.S., Illinois. J. D. Hopkins, D.V.S., Wyoming Territory. D. M. Scheffer, V.S., Indiana. C. H. Peabody, D.V.S., Rhode Island. E. W. Rowland, D.V.S., Wisconsin. W. B. Rowland, D.V.S., Delaware. Frank Traver, D. V. S., New York.

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NOTICE.

Dr. D. P. Frame, of Burlington, Iowa, desires to dispose of his practice to a young veterinary graduate, on account of important engagements in another business.

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY SOCIETY.

The regular monthly meeting of the New York State Veterinary Society was held in the lecture-room of the American Veterinary College, Dr. R. W. Finlay in the chair.

Minutes of last meeting were read, and on motion were adopted.

At the request of the Chair, Dr. Faust stated to the meeting that he had lately been telegraphed for by the Board of Health of Dutchess County, to examine a herd of three hundred and fifty calves, which had been brought from Delaware, nothing wrong being noticed until they reached Dutchess County, when it was supposed that they were affected with contagious pleuro-pneumonia. This he found was not the case, but they were in a very bad way, and he expected about half the herd would die. It was a case of *strangylus filaris*, which was proved by examination of those that had died. Some held it was not contagious, but he considered it was, as in this instance, some cattle in an adjoining field where the calves were had become affected. In one case only did he find solidification of the lung, which he considered secondary.

Dr. R. A. McLean considered the trouble a traumatic one, and the question was, where did the first conception take place, were the *filaris* inhaled in Delaware? After some discussion had been indulged in he spoke of a case of glanders that he lately had, in which a so-called veterinary surgeon had been prosecuted for treating, and for which he was fined one hundred dollars or one hundred days

in prison, where he was when he heard of him. This was the result of his treating a case of glanders as a wart, and while doing so allowing it to work to a wholesale meat wagon. The subject of glanders was partly taken up by several cases being given by some of those present.

Dr. R. W. Finlay spoke of a case that he had lately had in court. On his first visit, about a month ago, he found the general vitality very low, its history being that about three weeks previous the horse had slipped, hurting himself, which resulted in some small abscesses appearing. The case was treated with preparations of arsenic and fumes of sulphur with good food; the horse did well under this treatment, the temperature coming down from $101\frac{1}{2}$ to $98\frac{2}{5}$, the leg better, general appearance better, and about fifty pounds heavier, with the discharge stopped. He again saw the horse, and gave a certificate that the horse was free from glanders. The owner, however, got arrested, and the horse was destroyed; he was brought to cause in the interest of his certificate and the owner, there being two graduated veterinary surgeons on the other side. The case was thrown out of court, and the owner would now try to recover the value of the horse. One of the surgeons had diagnosed the case as one of glanders in May last and had failed to make any report on the case till recently, for which he was censured by the court.

Dr. Bowers related a case where he first found simply a swelling of the sub-maxillary gland; the horse was kept working, but isolation was ordered. A month after he saw the horse again, when he was lame; diagnosed glanders; but thought he would try the so-called treatment for glanders. He lanced the abscess when it got large, and found laudable pus; abscess after abscess formed, which were lanced and washed with a very strong solution of carbolic acid, and under the treatment the horse got better; leg got well, everything seemed to return to its normal state, when, after some time, the case turned out to be a very bad one of glanders.

Dr. Pendry said it was quite apparent that there was a difference of opinion as to what really constitute premonitory symptoms of glanders, and as proof of this, he would call the attention of the meeting to a case in point, which occurred in his own practice. He had been treating for some time a newly purchased horse for influenza, the case got along very slowly, the temperature keeping up between 102° and 103° ; all at once he took a turn for the better, eating well and taking on flesh, but the temperature still kept about $102\frac{1}{2}$, with a discharge at the nostril and one or two abscesses appearing on one of the legs; the swelling of the sub-maxillary gland was considerable, but not much weight was given to this, as it was not of the nature that was looked for in glanders. The owner was informed that the case was suspicious, and that a consultation would be held. A well-known practitioner was called in, who, after an examination, said the horse was glandered. This same gentleman saw the horse again on the following day in the interest of the party who sold the horse, and again expressed the same opinion. About the next day there was quite a discharge from one of the nostrils; this, with the corded condition of the lymphatics along the cheek, cleared up what little doubt I had of its being glanders, and so informed the owner of the opinion we had arrived at, at the same time expressing a willingness to meet any one he might like to see the case. He spoke of another well-known practi-

tioner, whom I called in, and the result of the examination was that he disagreed with the diagnosis made. The swelling was lanced, and a large discharge of thick, though somewhat greenish in color, pus was had. He left the case for the day, when the next news he had was that the last gentleman called in was treating the case. He continued to do so for some considerable time under lock and key. The result of the treatment was, he understood, that the horse was now working, and had been for several months.

The Chair said it did certainly appear that there was a difference of opinion, and he thought it would be a good idea to have a paper read, so that the subject could be thoroughly discussed.

Dr. R. A. McLean offered to read one on the subject at the March meeting. The Chair thought it should be read at the next meeting, but Dr. McLean thought there would be enough at that meeting, it being the annual one.

The Board of Censors reported in favor of Wm. Masham, V.S., and Wm. J. F. Harris, both of New York city, who were duly elected to membership.

Meeting then adjourned till the second Tuesday in December, when the election of officers will take place.

W. H. PENDRY, D.V.S., *Secretary*.

ILLINOIS STATE VETERINARY ASSOCIATION.

At the annual meeting of the Illinois State Veterinary Association, held Thursday, Nov. 11th, there were several interesting addresses and papers. Among these was one of considerable length, giving the result of the experiments made by Dr. F. S. Billings, of Lincoln, Neb., to determine the cause of so-called hog cholera. In this he severely criticises the conclusions arrived at by Dr. Salmon in the same direction, a portion of which we publish elsewhere in this issue. Officers were elected as follows: President, B. B. Page, Rockford; Vice-presidents, A. B. McGuire, of Joliet, W. L. Williams, of Bloomington, and James Bond, of Streator; Corresponding Secretary, J. F. Ryan, Chicago; Recording Secretary, Phillip Whitman, Chicago; Treasurer, A. H. Baker, Chicago; Board of Censors, R. J. Withers, J. Hughes, and J. Casewell, all of Chicago.

NEWS AND SUNDRIES.

It is estimated that there are nearly 75,000 horses in New York city, and about 200,000 in London.

PLEURO-PNEUMONIA IN INDIANA.—Dr. D. H. Patton, of Remington, Ind., writes us in reference to the reported outbreak of pleuro-pneumonia in Jasper county as follows: "Dr. Navin, the state veterinarian, came and made an examination of a carcass of one of the affected cattle this morning, and pronounces it genuine pleuro-pneumonia. Out of the herd of eleven, four

were diseased. One of the four was dead, and the other three are expected to die. But I think they are to be destroyed and burned.”—*National Live-Stock Journal*.

STAMPING OUT PLEURO-PNEUMONIA.—Mr. T. Duckham, in a letter to the *Live-Stock Journal*, London, urges that the only protection against the spread of pleuro-pneumonia consists in slaughtering not only the affected animals, but also all that have come in contact with them. He says: “The losses the disease have imposed upon the nation since its first introduction in 1842 run up to an inconceivable amount. It has spread distress and ruin in very many cases throughout the length and breadth of the United Kingdom. Yet there are local authorities who hesitate to deal with it in the only rational manner to insure its extermination, by the slaughter of all animals that are diseased, and all that have been herded with them. The frightfully contagious nature of the disease, and its treacherous and fatal character, have long since proved that to be the most economical and only certain way of exterminating it.” The spread of the disease in Great Britain is shown by the statement that “on August 21st it was in ten English counties, the North Riding of Yorkshire, and the metropolis, and in eight counties in Scotland; on September 18th it was in thirteen English counties, the north and West Ridings of Yorkshire, and the metropolis, and in eleven counties in Scotland.”—*National Live-Stock Journal*.

INOCULATION FOR PLEURO-PNEUMONIA.—In our last issue we referred to the discussion going on in England regarding inoculation to prevent pleuro-pneumonia, and mentioned that the majority of those who took part in the discussion were opposed to trusting to this system. On this subject the editor of the *Live-Stock Journal*, London, says: “It should be mentioned that a few members of the veterinary profession are strongly advising that a trial should be given to the system of inoculation, to be practiced on uncontaminated animals in herds in which pleuro-pneumonia has broken out. Some of the local authorities, in their reluctance to incur the cost of slaughter, will probably

hatch eagerly at this idea, which is advanced on professional authority. In view of the fact that it is admitted 'that pleuro-pneumonia is proving itself a much more troublesome malady to eradicate than cattle plague or foot-and-mouth disease,' we think it is somewhat injudicious to advise a remedy which, it is also confessed, 'has never been thoroughly and publicly tested in this country.' We want to get rid of the disease as fast as possible, and not to try experiments with systems of inoculation. It is most desirable that in some scientific institution inoculation should be submitted to a thorough test, but our live-stock interests are too valuable to allow experiments to be tried upon them."—*National Live-Stock Journal*.

INOCULATION FOR PLEURO-PNEUMONIA.—Dr. D. McEachran, live-stock inspector for Canada, in a recent address before the Veterinary Medical Association, in Montreal, expressed his opinion on the danger and impracticability of inoculation to prevent the spread of pleuro-pneumonia, as follows: "On this important question, time does not permit me to enter at length to-night; suffice it to say that in every country in the world where it has been impartially tried and reported on, the report has been unfavorable. It is not only a useless, but a dangerous practice, not only in districts where the invasion is new and limited, and it is not warranted by any known benefits. Many die from the operation itself, and wherever it is practiced it has to be kept up; thus in large dairy byres in Scotland, in Glasgow, and Edinburgh, where the lives of the cattle are protracted by inoculation, every fresh animal taken into it has to be inoculated; hence we have a constant supply of the virus existing and kept active in these centers of disease. It is bad enough thus to perpetuate such a disease in countries where it has gained a foothold. Yet I wonder that the agriculturists of these countries have not long ago risen as one man to demand that this iniquitous practice be made illegal. It is as incumbent on the government of Great Britain to do this as it was to make inoculation with small-pox virus illegal. What, then, would we say to those who would propose such a practice to save the lives, if possible by that means, which I doubt, of a few cattle, no matter what their value

might be, in a country free from any taint of the plague. Language strong enough cannot be found to denounce the suggestion. Knowing as we do that the so-called recovered (I use the term 'so-called' because I do not believe perfect recovery of the lung is possible from this disease) and the inoculated cases are the secret sources of dissemination of contagion in this disease, and those occult outbreaks, properly traced up, would be referable to a recovered or an inoculated case."—*National Live-Stock Journal*.

INTERESTING CASE OF RABIES AT BRADFORD.—We understand that one of the Bradford police force was a fortnight ago severely bitten by a dog supposed to be mad. The evidence obtained from a post-mortem examination of the animal, made by Dr. Hime, was, as is usual, quite undecisive. However, Dr. Hime, to decide the question, applied Pasteur's test, by inoculation of a rabbit with material taken from the dog, he being the first to do so in this country. The rabbit has shown the usual symptoms of rabies, and there is no longer any doubt as to the dog having been rabid. It had bitten the man on two fingers of his right hand, and died ten days after while under Hime's observation. It is extremely fortunate that Dr. Hime, who for a considerable time was in Paris studying Pasteur's method, has been thus able to utilize his knowledge of the subject. He has previously been able, by application of the same method, to pronounce several suspected dogs to be free from rabies. Fortunately the policeman was, by Dr. Hime's advice, despatched to Paris for treatment, and his public history will be watched with interest. Dr. Hime, it will be remembered, took over to Pasteur a party of nine persons bitten by a rabid dog last March, and subsequently had himself to undergo a course of treatment by M. Pasteur for serious injuries received. One person bitten by the same dog which bit the nine died of rabies, but he was not treated by Pasteur.—*London Lancet*.

AMERICAN VETERINARY REVIEW.

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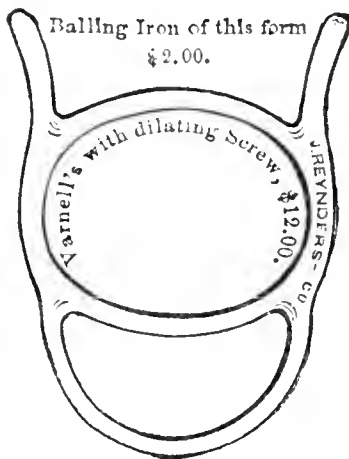
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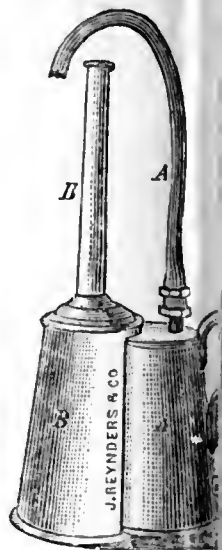
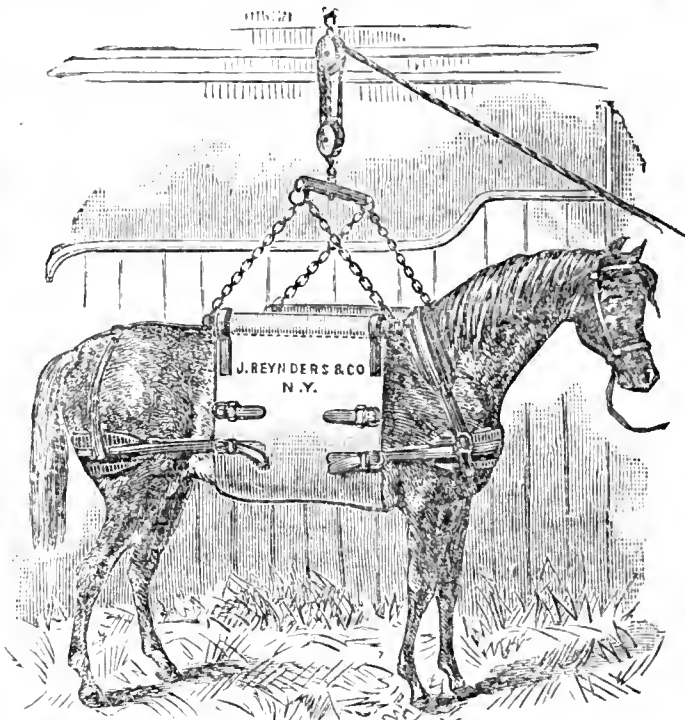
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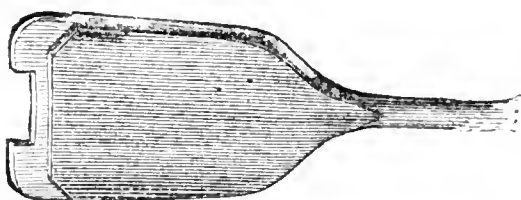


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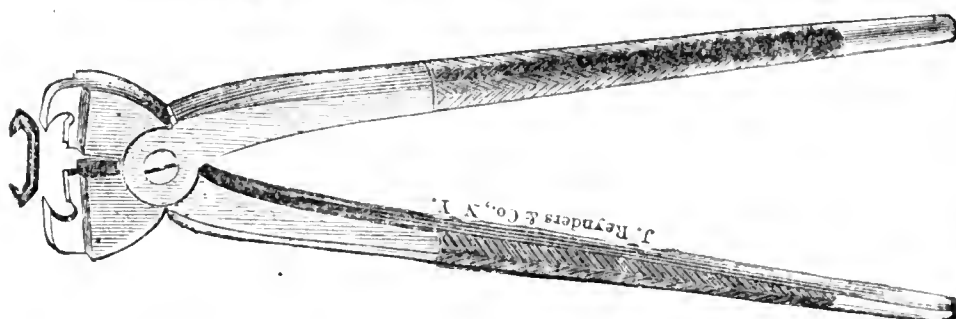
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AMERICAN VETERINARY REVIEW,

JANUARY, 1887.

EDITORIAL.

EQUINE ORIGIN OF TETANUS IN MAN—the infectious nature of the disease admitted by some writers—Mr. Verneuil's case—the infection, if existing, has been in place after four years—the infectiousness seems to be disproved by many important facts—why are veterinarians not more subject to it?—Professor Ward knows of no case referrible to such an origin—death of Dr. Wing—his probably the first of the kind on record, and furnishing a stronger confirmation of the new theory than any other yet published—new observations to be made. LEGISLATIVE REGULATIONS—the law in New York now in full force—three hundred and twenty-seven practitioners registered in this city; thirty-five in Brooklyn—many left out—is there any redress for their omission?—can the various societies give them another chance by admitting them to membership?—if they can do so, what is the law worth?—The mutilation of section 2 of the law ought to be ignored—the societies ought to admit none but regular graduates to membership, and to refuse certificates to applicants who are not regular members of the profession—their diplomas will then facilitate their registration. PLEURO-PNEUMONIA AGAIN—the godfather of the disease, in 1843, named it pleuro-pneumonia, and the French now call it by the same name—important communication from Dr. McEachran to Dr. Hopkins in recommendation of the stamping-out process—his strong condemnation of the inoculation plan—the danger attending it, if allowed to be practiced by every one—cattle dying from septicemia in New Jersey—TWO INTERESTING CASES, by Dr. Gribble and Dr. O. Wiley. SEMI-ANNUAL MEETING OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION. SPECIAL NOTICE.

EQUINE ORIGIN OF TETANUS IN MAN.—The infectious nature of tetanus was long since admitted by such eminent surgeons as Billroth, and others, but has also found many opposers, among whose names stands that of the celebrated French surgeon, Mr. Verneuil. In some recent communications made by this writer before the *Academie de Medecine*, however, he has

brought forward the remarkable hypothesis of the transmission of the disease from the horse to man, and in this connection describes certain peculiarities noticed by him in several cases. Amongst these he mentions one of a lady who was seized with well-marked symptoms of tetanus subsequent to an injury of the elbow. Her husband owned horses, two of which had died from that disease, the death of the second having occurred four years previous to the sickness of the lady. In view of the lapse of so long a period of time, would it be prudent or rational to look at the death of the horse as the cause of the sickness of the lady? In support of such a theory, the statement is referred to, that where tetanus prevails, men and animals are affected with it simultaneously; and again, that in the army the disease is more frequent in the cavalry service than amongst the infantry or in the marine branch. To this reasoning the practical veterinarian can oppose a good negative, and argue that, when such an infectious condition exists, there is no other class of persons likely to contribute so large a quota of victims to the disease as the veterinary surgeons, who, by their calling, are so directly and constantly in contact with the danger. Professor Nocard, in his editorial in the *Recueil* of October 15th, states that "he does not know of a single case where a veterinarian, a veterinary student, or a hostler, of the hospitals of Alfort, has ever died of lockjaw."

To conclude, a new field of inquiry seems to be here opened, in which close observations and new facts are needed before the question can be thoroughly mastered and positively settled. On our part, we can already bring one case which we believe to be entitled to more weight than that of Mr. Vernueil.

This, we are grieved to say, involves the greatly-regretted death of Dr. Wing, a graduate of the American Veterinary College, who recently succumbed to a tetanic attack. The facts, which we have been endeavoring to obtain, will appear in our columns as soon as they come into our possession. But we have none of us forgotten the sorrow with which we received the intelligence of the sad event, which we have already recorded in the *REVIEW*. The doctor had been treating a horse, which died subsequently with lockjaw, and having unfortunately scratched his

ed at the post mortem, the young veterinarian had thus come *inoculated* with the disease, which, in a few days, terminated his earthly career.

LEGISLATIVE REGULATION.—The law passed by the Legislature of the State of New York, regulating the practice of veterinary medicine, has now gone into effect, and the registration of veterinary practitioners is now an accomplished fact. No one can now lawfully practice who has not appeared before the County Clerk, and produced the proof of his right to do so. The graduates can still register, and we suppose the members of the county association are also eligible. But the self-made practitioner, who has for any reason neglected to do so, has lost his legal right to practice, or, if he does so, he becomes, and his persistence in so doing will make him, amenable to the requirements and penalties of the law, as defined in the fourth section of the

A list of the names of all those who have complied with the law in this city and Brooklyn will be found in the present number of the REVIEW. It is copied from the official record, and we are thankful to those of our friends who will forward to us for publication a complete list for each respective county throughout the State.

Since the expiration of the period limiting the time of registration, it has transpired that sundry self-made practitioners, on various causes, such as sickness (?), carelessness, forgetfulness, or mere neglect, having failed to register, are no longer entitled to continue the practice of their "professional" calling. This must prove to some of them a most unpleasant predicament, though it is difficult to understand just how they can be helped, supposing them to deserve help. It has been suggested that the State or the county societies might come to their assistance, and that, by admitting them to membership, they would become able to fulfill the requirements of the second section of the law. Perhaps it is true that their disability may be removed by this process. But is such a measure practicable? It is the object of the law to make it obligatory upon every practitioner to be a graduate; and unless such be his standing, he is

forbidden to practice. To accomplish the intent of the law, it has been thought necessary to give a certain recognition, under some special provisions, to non-graduates, but the application of these conditions cannot be any longer continued. The man who has practiced over three years can no longer, merely by making affidavit to that effect, take his place on the register. The day is for him gone by; the register is closed. It is true that, by one of the most shameful of omissions, in the mutilation of section 2 of the original law—the law which all interested parties sustained—State and county societies have it in their power to receive them into membership, and give them certificates; but if this is done, of what value is the law, unless the admission is rigidly conditioned upon the *most positive evidence of knowledge and ability*, and the fact is explicitly stated in the diploma awarded to the applicant—the diploma which will then enable them to register. But the law is passed, and, *as it is*, it becomes the property of the veterinarians of the State, especially of those constituting the various organized societies. Upon these it especially devolves to see that the striking out (by whose authority no one knows!!) of the most important clause of the second section does not injuriously interfere with the realization of the great object which the law primarily contemplates, and does not hinder the elevation of the profession and the extirpation of quackery, if that be possible.

As our issue goes to the binder, the following is obtained from the daily press. Is there any law, or is there none? By what authority is it ignored by the honorable judge of the Brooklyn City Court? Will the County Veterinary Society ignore the action?

HE WASN'T AWARE OF THE LAW.

Mr. Wells Baker, an old veterinary surgeon of Brooklyn, discovered for the first time yesterday that the Legislature had passed an act last spring forbidding any one to practice veterinary surgery who did not, within six months after the passage of the act, register his name with the clerk of the county in which he resides. Mr. Baker hastened to the clerk in alarm, but was told that he was too late. He then went to Judge Clements, of the Brooklyn City Court, and obtained from him a writ of mandamus compelling the clerk to register his name. This was promptly done.—*N. Y. Herald*.

This subject of protective legislation was the topic of a long

letter from our friend Dr. Lowe, which we laid before our readers in our last issue. In our present number we print an answer from Dr. Pendry, who, having fought so bravely for the passage of the act, comes now to its defence and rescue. In the argument held by the Doctor, he evidently also considers the mutilation of section 2 as a matter of little importance, *provided only* the * * * veterinarians will, one and all, do their duty—which we *hope* will be the case.

PLEURO-PNEUMONIA AGAIN.—Our correspondent, Dr. Gadsden, has requested the insertion in our columns of the following notice, a request with which we comply with pleasure. The name to which he objects is not only used in England, but is also of common application in France—*La peripneumonie contagieuse* being the name given by French veterinarians, by Delafont and others, and corresponding with our contagious pleuro-pneumonia.

From the transactions of the Veterinary Medical Association in England, meeting January 6th, 1843, pages 214 to 217, “from J. Lepper, V. S., Aylesbury;” he was describing some cases of this new disease.

“Lung on the right side was consolidated, and weighed thirty-two pounds, while that portion on the other side weighed only about five pounds, and a large portion of fibrin or plastic lymph intervened between the pleura-pneumonialis and pleura-costalis, the whole being united so as to form one mass. Both of the membranes were greatly thickened, as was also the inferior part of the diaphragm, to which a portion of the lung was adherent. The diseased portion of the lung, when divided, presented a very marbled appearance, arising from the cellular tissue which connects each lobule of the lung being surcharged with fibrin, thus separating each lobule some distance apart, and varying in thickness from the third part of a line to the eighth part of an inch. I am at a loss as to the name by which the disease may be correctly designated, and I suppose others much more competent than myself are equally undecided.

“Pleuro-peripneumonia” appears to me the most appropriate; it is evidently a specific disease.”

Now, Mr. Editor, won't you publish this to the profession, as I think it ought to be known *who* gave it that name. In my opinion it was a very poor one.

J. W. G.

Speaking of contagious pleuro-pneumonia, it gives us pleasure to print a letter addressed to Dr. Hopkins by Professor M. Eachran at the time of the last national convention of catt growers. An opinion expressed by Dr. McEachran must always carry its weight. His long experience with the disease and his many opportunities to battle with it and to apply the means by which he has so often conquered it, will render his letter interesting to the profession, and we hope will also tend to enlighten our legislators as to the measures most necessary in contending successfully with the common enemy.

How far removed, indeed, is his strong and emphatic recommendation of the stamping out process, from the uncertain and inefficient, and dangerous, withal, measure of inoculation which has been at once opposed by many and vindicated by others. The following extract deals a telling blow against the adoption of the inoculation plan *in this country*, except under the most guarded and efficient regulations, strictly and conscientiously enforced.

THOROUGHbred CATTLE DYING. BLOOD POISONING IN NEW JERSEY HERDS AFTER INOCULATION WITH IMPURE VIRUS.

MOUNT HOLLY, Nov. 23, 1886.—The great increase in the number of cases of blood poisoning among thoroughbred cattle in Burlington and adjoining counties has filled cattle breeders with alarm, as the veterinarians have been unable to cope with the disease.

The disease first made its appearance on the Sooy farm, not far from the county line, among a lot of Ayrshire and Jersey cattle. The symptoms were clearly those of blood poisoning, and in a few days several of the animals died. Since then a number of additional deaths have occurred, and the disease appears among the thoroughbred Channel Island cattle in the vicinity of Mount Holly, Medford and on the borders of Atlantic county.

As far as can be learned not a single animal recovered from an attack of the malady. This increased the feeling of alarm already existing among breeders and they accordingly summoned Dr. W. B. Miller, of Camden, one of the officers of the State Board of Health. Dr. Miller made an investigation which led to some strange developments. He learned that prior to the appearance of blood poisoning there had been a good many cases of pleuro-pneumonia, to avoid the spread of which inoculation had been resorted to by local veterinarians. In nearly every instance the animal so inoculated was seized with blood poisoning and died. In each instance the tail of the inoculated animal began to swell and decay, and death soon occurred.

A still further investigation led to the discovery that the virus used in inoculating the animals, and which is procured from the lung of a cow suffering from

uro-pneumonia, was taken from a cow that was otherwise diseased. Carelessness in selecting virus is regarded as the cause of the trouble. As a great many cows were inoculated with this virus it is feared that many more deaths will follow.

TWO INTERESTING CASES.—Two interesting cases are recorded this month. One is from Dr. Gribble, who describes a case of mortification of the lower extremity of the leg of a horse, probably from disease of the blood vessels of that region; and the other from Dr. O. W. Finley, who reports the natural expulsion of a very large cystic calculus.

SEMI-ANNUAL MEETING OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION.—We take this early opportunity to remind the members of the United States Veterinary Medical Association that the semi-annual meeting will take place on the third Tuesday of March, 1887, in Philadelphia. Further notice will be given in due time. In connection with this matter we would remind our readers that the prizes provided by the Association and by the editor of the *REVIEW*, are still offered for competition, and that while no decision will be made at the semi-annual meeting, it would not be wise for the candidates to defer too long the presentation of their competing papers.

SPECIAL NOTICE.—We are nearing the close of our tenth volume, and many (too many) of our friends have neglected to make the little remittance for which we would like to give them credit on our books. Some of them, indeed, have overlooked this matter for several years, and we recall the fact to their minds with the hope that they will think well of our suggestion to send us a post office order at once.

PROPHYLAXY OF RABIES.—Up to the 26th of October, 2490 persons had received treatment at the Rue de Ulm Laboratory. By nationalities they are classified as follows:

England, 80; Austria, 52; Germany, 9; Belgium, 57; Spain, 107; Grece, 10; Holland, 14; Italy, 165; Portugal, 35; Russia, 91; India, 2; Roumania, 22; Turkey, 7; Switzerland, 2; United States, 18; Brazil, 3; France and Algiers, 1726.—*Revue Scientifique*.

ORIGINAL ARTICLES.

RABIES VERSUS COMMON SENSE.

By G. ARCHIE STOCKWELL, M.D., F.Z.S.

“Dogs suffer from *rabies*. This induces a state of madness and all creatures which are thus bitten by them are likewise attacked with the malady. It is fatal to dogs, and likewise to others that are bitten by them.” Thus wrote Aristotle more than two thousand years ago; and two hundred years before Democritus described the same as an “affection of the nerves.” Again, A. D., 176, or thereabouts, Celsus, a contemporary of Galen, declared: “If the wound produced by the bite of a mad dog be not promptly and energetically treated, *hydrophobia** ensues—a most deplorable malady; one in which no hopes of recovery can be entertained.” The same author farther recommends the virus to be “drawn from the wound by means of cupping glasses, treated by the hot iron or other cauterizing agent, and systematically bled.” A detailed account of the malady is also handed down to us from the pen of Dioscorides, who flourished about the same time, and that embodies pretty much of what is known of the subject even to this hour, aside from modern speculative theories; he pronounces it “frightful;” avers the impossibility of saving life once it has fairly manifested itself; describes the varying period of incubation; insists upon the importance of preventive measures; and recommends caustics, ligatures, scarification, and even amputation. Cælius Aurelianus, half a century later, treated the subject with wearisome accuracy, delineating all the important factors of the disease, even to origin, progression, absorption, localization, differential diagnosis, etc.

In spite of the lapse of centuries and strides of medical science, especially in the direction of pathology and specific and septic processes, it is humiliating to be forced to acknowledge, that in so

* This is the first application of the Greek word of which we have knowledge, and manifestly is employed to designate a *symptom*, and not a specific of a malady.

rabies is concerned, we are little, if any wiser than the ancients. Notwithstanding the vast amount of literature devoted to the subject, it is little but repetitions, and the fallacious theories and hypotheses of twenty centuries gone by, still obtain in all force; no one subject or belief are the superstitions of remote antiquity rife or rampant! The ablest pathologists and physiologists of modern ages have bent mind and energies to the elucidation of the problems of *rabies* in vain. Bacteriology, which opened up a long vista of pathological probabilities, is here powerless. The rules laid down by the medical and veterinary professions are wide, conflicting, indefinite, affording nothing reliable or tangible. Autopsies by the scores and hundreds, both of men and animals, result in no enlightenment; they have revealed many and varied pathological conditions, all of which, however, when submitted to accurate scrutiny, are found lacking in one great consideration—*specificity*! What then is *rabies*? How shall it be defined? And what are its dangers, real and assumed?

1. As medical science progresses, and further insight is had into the phenomena presented by multiple maladies having their origin in, or manifested through the nervous system, the conclusion is rapidly being forced upon all observant and thinking minds, that *rabies* is not a disease *sui generis*, but merely the manifestations developed by irritated nerve centres, and that may arise from numberless causes!

2. As *rabies*, whether in men or animals, possesses no symptoms, or trains of symptoms peculiar to itself, not even fatality, and as it presents no phenomena that are not also manifested in some three score and more of diseases, common to both, its presence can never be so accurately determined as to preclude possibility of error!

3. The dangers of *rabies*, as *rabies true and simple*, are most remote, and almost wholly assumed; they arise from causes which prevail in greater or less degree at times, in all countries and communities, and are to a great extent psychical!

It is not within the province or scope of this paper to either affirm or deny the existence of *rabies* as a disease *sui generis*; it will suffice to *suppose* its existence; neither to meddle with the

theories and methods of M. Pasteur, farther than to remark the lack confirmation, are not in any way supported by any physiologist or pathologist of reputation or note, since they controvert established and proven physiological and pathological facts, and are faulty and unreliable in that they have not been submitted to the tests of control experiments, whereby are developed those negative elements which alone establish the value of the positive, and rest solely upon the unsupported evidence and assertions of the authors. Years must elapse ere any satisfactory or definite conclusion can be drawn from Pasteur's methods, even if the principles were true; and the microbe theory involved, however logical, yet awaits the discovery of the microbes themselves.

At the present moment the civilized world is unfortunately afflicted with a wide-sweeping epidemic of *lyssa-phobia*—*rabies-phobia*, if you will. Spurious rabies was never more prevalent and has arisen in part from the ignorance of the general public and their medical advisers, but chiefly by a widely disseminated ill-advised literature, that is the outgrowth of the sensational. It is to be feared also, that M. Pasteur's skirts are not wholly clean in this matter, in that he has given tacit encouragement, if not material aid to such procedures, and thereby provoked the enmity of the ablest minds of Europe, including his own countrymen who do not hesitate to accuse him of fostering evil to the most base of personal ends.

With a view to affording more general information regarding a subject little understood, and of allaying in some slight measure the senseless alarm that has resulted in the torture and death of innumerable innocent canines, I offer a few established, indisputable facts.

TRUE *rabies* primarily appears as a disease of the *canidae* secondarily to a slight extent, of other true *carnivoræ*. It is not contagious, but an acute infectious malady of *extremely rare occurrence*!

RABIES *never arises spontaneously*. It can only be communicated and propagated by *direct infection*; that is, by the bite of some creature in whom the disease is *fully developed*, whereby the rabic virus is brought in *immediate* contact with the circula-

ory system; under other circumstances the virus is innocuous, and may be swallowed or applied to sound cutaneous or mucous surfaces with impunity, and the flesh of rabid creatures can be partaken of as food without fear.

The *saliva* is the only factor definitely producing rabid-virus. *It alone has ever been known positively to communicate the disease,* and the inoculation of creatures by other assumed rabid materials secures no phenomena that are not likewise developed by the use of other septic (non-rabid) substances. Recently Galtier, of Lyons, one of the most able, thorough and *candid* observers ever produced by France, undertook some hundreds of experiments, whereby was developed the fact that the *materies morbi* of *rabies* is contained in the *saliva of the dog* alone, and that inoculation with portions of salivary and parotid glands, with the contents of the stomach, with the blood, with secretions of the pancreas, and with brain and spinal substance and fluid, led to no infection. He further cultivated the virus of rabid dogs in normal saliva and vaccinated rabbits and Guinea pigs that died in from four to twelve days; but on vaccinating dogs again with the saliva of these creatures, he *was unable to produce rabies in a single instance*. Dr. Spitzka, of New York, also, as recently as May and June of the present year, secured to a number of canines (exhibited to the "*Society of Medical Jurisprudence and State Medicine*") all the phenomena ascribed to a vaccinated *rabies* as developed from supposed rabid substances other than saliva, and by the inoculation of simple septic materials procured from healthy and diseased (non-rabid) creatures alike, as well as by other and aseptic substances.

Experience and experimentation have also demonstrated, aside from the foregoing, that the rabid poison can be transmitted *only* through, or by, the *true carnivoræ*—creatures whose lives are dependent upon animal foods, and that are liable to retain in and about the mouth and teeth particles of decaying and putrid animal matters that are of themselves capable of provoking septic poisoning in those bitten. Hence, wounds inflicted by dogs and other *carnivoræ* are in no sense evidence of *rabies*, even if followed by serious or fatal results; and this leads to the inevitable con-

clusion that the disease denominated "hydrophobia," in the great majority of instances, would never have been accepted as such only for the relations of an animal thereto, and that they are the result of functional disturbances of nerve-centres as a sequel to, (1) *simple septicæmia*, or blood poisoning, and (2) the fears and imaginations of individuals and their friends. When we consider fully the influences of fear, shock, anxiety and joy upon the nerve-centres; that persons have died suddenly, within a few moments, or hours, from fright; that individuals in robust health, by the unexpected loss of friends or possessions are attacked by convulsions, reduced to insanity, permanently invalided and driven to *felo de se*, we understand readily how cases of *rabies* are unwittingly manufactured and ignorantly chronicled. No physician, however profound, as no neurologist, however able or experienced, has ever been permitted to fathom the mysterious workings of the nervous system under profound agitation of the mind, or to discover what influences this perturbed mind may have reflexedly upon the nerve-centres, and through them upon morbid agents that may already have been implanted within the body!

If an animal suspected of *rabies* presents no markedly recent and unaccounted-for scar or wound, or if its previous history be in any way inimical to wounding, or contraction of disease, *no fears should be had of the disease!* An animal in the full tide of health, playful, kittenish and bright, can inflict only a *false rabies* inculcated through fear and imagination!

A strange dog, pursued by a cruel mob—and mobs are always cruel—is no way responsible for its acts! A dog passing quietly along a highway, and suddenly, seemingly without provocation, pouncing upon a household pet, does not afford even presumptive or circumstantial evidence of *rabies*, nor demand the death of the latter. A dog 'badgered, is always dangerous'; dogs are exceedingly sensitive and emotional, naturally of markedly jealous dispositions, and prone to quarrel on the slightest provocation; and the vagrant cur invariably resents any assumption of superiority on the part of the more favored members of his race—he is a canine Ishmaelite in every sense of the term. How often one

ees two strange dogs meet with stiffened tails, touch noses, then all to quarreling; and I doubt not one says to the other in dog language: "You're a scurvy fellow;" "what are you doing here, any way?" "You're not clean;" "you smell bad;" perhaps applying more offensive epithets, any one of which would precipitate conflict among the higher orders of life.

(To be continued.)

HOG CHOLERA, OR SWINE PLAGUE.

By THOMAS BOWHILL, M.R.C.V.S.

(Continued from page 419.)

I have already alluded to the mild course the disease has taken in Nebraska, which will account for the number of pigs inoculated by Dr. Billings, which did not die, or were killed before death. Up to the present time the whole number inoculated has been twenty; number of deaths, eight; and of three rabbits, all died within four days; also inoculated three dogs, without any effect except the formation of an abscess at the locus of inoculation.

On account of Prof. Schutz having described the German disease as an infectious pneumonia, and having found a bacteria so nearly corresponding to ours, Dr. Billings decided to introduce the artificial virus directly into the large intestine, thereby lessening the chances of the bacteria being conveyed at once to the lungs, either by the lymphatics or blood vessels, to the least degree possible. But with all these precautions he had more or less annoying complications in every case, though the intestines also contained lesions. It might be interesting to you for me to report an autopsy on an animal which was subjected to one of those experimental inoculations. The subject, a hog four months old, absolutely healthy and in fine condition, inoculated with material which Dr. Billings obtained from some sick hogs at Rising, Neb., September 20, 1886, and which had been carried rapidly through three culture generations—the bacteria being present and in an absolutely pure condition. This hog was inoculated on September 28th. The following changes took place: October 1st, off its

feed, and continued to be more so until it was killed, October 7th. temperature for several days about 104° Fahr. October 3d it began to emaciate and had a distressing cough, with yellowish discharges from the nostrils and a pultaceous discharge from the rectum. Being very sick on the 7th of October, and liable to die before next morning, it was considered best to kill the animal which was done. No staining of the skin was observed (it was a very black pig). (The animal was inoculated, as described above but in some few cases where we have resorted to sub-cutaneous inoculations we have had excessive tumefaction and heat, with discoloration of the skin.) On cutting through the skin of this animal the blood which flowed from the cut vessels was of a dark blue red color, and soon coagulated and became red on contact with the air. The large intestine was agglutinated and covered with a thick, flocculent lymph. The superficial inguinal and mesenteric lymphatic glands were swollen and reddened, and the mesenteric veins injected; bladder full. The small intestines presented a diffused red color; on opening, the mucosa was found swollen with diffuse capillary redness; Peyer's patches swollen with an occasional dark red spot in their midst; contents of intestines were fluid. The mucosa of the large intestine was red and swollen; also with dark red spots of various sizes dispersed through it: ileocaecal (or valve of Bauhini) intensely swollen. Throughout the large intestine were numerous ulcerations from the size of a pea to a ten cent piece, covered with a yellow, caseous mass; spleen enlarged, but not disintegrated; liver enlarged edges rounded; the acini distended and of a yellowish red color (degeneratio adiposa). The interstitial tissue was swollen, and the bile ducts somewhat distended with bile; kidneys, cortical substance, anæmic, and of a yellowish grey red color; medullary substance, red, and the vasa recti injected; slight effusion into the pleural cavity, but the pluræ non-adherent. The pericardium contained about two tablespoonfuls of a straw-colored fluid; the myocardium was of a yellowish gray red color, anæmic, and a few petechæ on the endocardium. In the lungs were small centres of lobular hepatization. The bronchial tubes and trachea contained a purulent, viscid effusion, the mucosa being swollen and injected

bronchial lymphatic glands enlarged and œdematous; stomach and its mucosa swollen, ulcerated and covered with a viscid mass; and near the pylorus stained with bile. Microscopic examination of the spleen and blood revealed the presence of the characteristic bacteria.

DIAGNOSIS.

Peritonitis visceralis adhesiva.

Enteritis tenuæ catarrhalis et hæmorrhagica.

Enteritis crasus ulcerativa follicularis cascosa.

Splenitis parenchymatosa.

Nephritis parenchymatosa.

Hepatitis parenchymatosa et degeneratio adiposa.

Gastritis catarrhalis.

Lymphadenitis parenchymatosa hæmorrhagica.

Pleuritis effusa.

Broncho-pneumonia lobularis.

Myocarditis parenchymatosa.

Tracheitis et bronchitis catarrhalis purulenta.

Dr. Billings has also endeavored to prepare a vaccine from pure cultures of the bacteria, but as the method is not completed to his satisfaction I am not at liberty to mention it. Nevertheless, he has at present fifteen hogs under one year old which he has rendered immune to a virus of the first culture. Dr. Billings had no opportunity of testing the above animals by natural infection until October 27th, when a severe outbreak of swine plague occurred in the vicinity of Lincoln among some hogs recently imported from Iowa, among which he has placed the above-mentioned animals and naturally awaits the result with some amount of anxiety.

This affected herd was placed at the doctor's disposal to do as he pleased, there being seventy-five hogs in it. At the present time they are dying at the rate of three or four per diem.

We have been making autopsies daily upon dead ones, and so on one or two we have killed, and found lesions in some, which go to show they must have brought the disease with them, the very acute and extremely characteristic case being at our disposal on the 26th of October, the autopsy of which offers, not

only some very characteristic lesions but also in a very severe form. I have taken the liberty of bringing specimens with me and will now describe the results of the autopsy held on a hog October 26, 1886. Subject, large hog about nine months old, color, black, and in fair condition. Around the head were to be seen some tumefactions, characterized by being even darker than the skin of the hog, and of a bluish red shade. Along the abdomen were numerous dark blue red spots, which terminated diffusely in surrounding tissue. On cutting through the skin the panniculus adiposus was marked by numerous diffuse reddish blue spots, and a dark blue red fluid flowed from the cut blood vessels. The abdominal cavity contained about two quarts of a straw colored fluid in which numerous flocculi floated; large intestine agglutinated together with a quantity of flocculent lymph, and their surface very irregular and distended by immense masses of hard, smooth, round-shaped bodies, as large as medium-sized potatoes. The small intestines presented a diffused reddish appearance, interrupted by numerous dark red spots; peritoneum swollen, cloudy and covered with immense numbers of bluish red ecchymosed spots; liver greatly swollen, edges rounded, but peritoneal covering normal, and through it you could see numerous irregularly formed yellow spots of various sizes. On cross section of same it was seen to be of a grayish yellow red color, the acini being enlarged and of the same color, though yellow predominated. The gall ducts were distinctly visible in the interstitial tissue, which was also swollen. The gall bladder was distended and contained a viscid yellow fluid; spleen, intensely enlarged, sixteen inches long, three and a half wide at superior end, and a quarter of an inch at inferior end. (Since this autopsy was made we have found a spleen twenty inches long and of proportionate thickness.) The pulp was disintegrated, and formed a dark bluish red, semi-fluid mass. The trabeculæ were swollen and distinctly visible through the capsule; Malpighian corpuscles enlarged and very marked; thoracic cavity, the cavity of the right side, filled with a dark red fluid, and the right lung was adherent to the ribs; both the pleuræ costalis and pulmonalis were marked with numerous ecchymosed spots, and similar spots were present

the pericardium; pericardial sac distended with a dark red fluid, and the visceral folds of the pericardium were marked by numerous dark red, ecchymosed spots. The myocardium was of an opaque, yellowish gray color, and very friable; right ventricle was distended, and the walls of the left ventricle hypertrophied. The endocardium was covered with numerous ecchymosed spots; the auricular ventricular valves shrunken and covered with numerous vegetations; bronchial lymphatic glands enlarged and juicy, the parenchyma being marked by numerous dark red spots, which gave to the cut surface of the gland an appearance somewhat resembling strawberries.

The surface of the lungs were marked by numerous dark red spots, from the size of a silver dollar to that of a pin's head, which extended beyond the surface of the lung and often corresponded to a single lobulus.

Numerous large centres of hepatization complicated the right lung, the base being one solid mass. Smaller ones were to be found in the left lung. On one section an aqueous, bloody fluid flowed from the surface of the cut lung, which presented a peculiar, gelatinous, glistening appearance in some parts, while others were dry and caseous; numerous lobuli were of a dark red color, and presented hæmorrhagic infraction of bronchial origin. The mucosa of the trachea and the bronchial tubes was intensely swollen, and marked by numerous ecchymosed spots and filled with a viscid, yellowish red material.

Abdominal cavity—The mesenteric lymphatic glands were swollen and marked by numerous dark red spots, already described in regard to the bronchial glands.

Stomach—Cardiac portion covered with numerous papillary outgrowths stained a yellow color. The mucosa was intensely swollen with marked rugæ, half an inch in height, and on the crest of these folds were numerous follicular ulcerations. Numerous ecchymosed spots were dispersed throughout its internal surface. On approaching the pylorus the mucosa was covered with a viscid, yellow fluid.

Small intestines—(a) Duodenum; contents were of a yellowish color and fluid, mucosa swollen and numerous dark red spots

scattered throughout its course, with ulcerative erosions also present. (b) Jejunum was of a dark, blue red color, resembling the so-called eel skin of rinderpest. (c) Ileum presented the same appearances, but Peyer's patches were swollen and marked by numerous hæmorrhagic spots.

Large Intestines—(a) Cæcum; contents of anterior part semi-fluid, and soon became hard, forming balls which extended to the rectum. The entire mucosa of the large intestine was swollen and of a dark red color, and marked by numerous hæmorrhagic ulcerations of various dimensions. The ileocæcal, or valve of Bauhini, was swollen and covered with petechial spots. About six inches from the valve a very large, ragged-edged, tumefied ulceration of a black red color was to be seen, one and a half inches in diameter, having an infundibuliform character. Numerous smaller ones of a similar character extended throughout the mucosa of the large intestine.

Kidneys—Nine inches long, three inches wide and one and half inches thick. On cutting through the vascular connections a large quantity of a dark red, coagulated fluid oozed out. The capsules were non-adherent. The cortex was opaque and of a pale, grayish red color, interrupted by numerous dark red spots of various sizes. Medullary substance was of a dark red color, the vasa recti being distinctly visible. The pelvis was filled with a dark red, coagulated mass, which was attached to the mucosa. The superficial and deep inguinal glands were enlarged and covered with numerous black spots.

DIAGNOSIS.

Peritonitis hæmorrhagica petechialis.

Acites abdominalis.

Enteritis ulcerativa hæmorrhagica.

Splenitis parenchymatosa hæmorrhagica.

Hepatitis parenchymatosa et degeneratio adiposa.

Nephritis parenchymatosa hæmorrhagica et degeneratio adiposa.

Lymphadenitis parenchymatosa generalis hæmorrhagica.

Pleuritis effusa et adhesiva hæmorrhagica.

Broncho-pneumonia hæmorrhagica et caseosa.

Tracheitis et bronchitis effusa et hæmorrhagica.

Laryngitis ulcerativa.

Pericarditis effusa et hæmorrhagica.

Myocarditis parenchymatosa et degenerati oadiposa.

Endocarditis hæmorrhagica et valvularis nodosa.

Gastritis catarrhalis et parenchymatosa hæmorrhagica.

Causus morvis; oedema pulmonum.

An examination of the blood, secretions and tissues of this animal, gave the characteristic bacteria, which also developed in cultivations from the spleen. It should be mentioned that all of the sick hogs in the herd, from which this came, were characterized by the most obstinate constipation, and that the popular name 'hog cholera' is not therefore a suitable nomenclature for this disease; and that the name swine plague is much more appropriate, though that given by Klein seems to correspond more exactly to the pathological lesions. Hence, I think, that veterinarians should speak of it professionally as pneumo-enteris suis contagiosa.

As to whether it is a contagious or infectious disease in the strict sense of the term, there is still room for some doubts, for, according to Dr. Billings' views, a strictly contagious disease is one which has its origin, so far as we know, in an animal organism of a given species, and never outside of it; but may be transmissible from animal to animal of the same species, and in some cases to others *i. e.* glanders, rabies, syphilis, while a strictly infectious disease is one bound on a locality in which an animal organism has to be in or go to in order to be infected. The infected animal cannot transmit the disease to other animals, but can carry the infectious* elements in its body, and thereby infect other localities through its excretions, which may then become centres of infection to other susceptible animals, *i. e.*, Texas fever, cholera, anthrax, yellow fever. There is some evidence that swine plague may belong to the latter class. In an autopsy made on the 28th of October, 1886, we found the lesions almost entirely restricted to the organs of the thoracic cavity and the throat, with the exception of a slight swelling and redness of the mucosæ of the alimentary tract, although the various lymph glands of the abdominal cavity presented the appearance above described. The

stomach, however, presented the most serious pathological lesions which we have yet seen, its walls being much thickened and extending into the cavity in deep folds over an inch high on the top of these folds, and between them were numerous ulcerations, covered with diphtherdic masses of a yellowish color, and numerous hæmorrhagic centres were dispersed throughout; the same bacteria presented themselves again in this case. By your permission and hoping I am not imposing on your patience, I will now describe the method we employ to demonstrate the presence of the bacteria in hardened specimens. It is by a system of double staining as follows: You can use either gentian violet or methylian violet, but for this organism I prefer the latter. Take a small porcelain dish, fill it half full of methyl violet and an equal quantity of caustic potash 1 to 10,000 of water; both of the above must be carefully filtered to guard against germs in the same.

Take a very thin section of your tissue and put into the above mentioned dye for twenty-four hours. From this it goes into Gramm's solution of iodine for five or ten minutes. The solution is prepared as follows: Distilled water one hundred per cent; iodine of potassium one per cent., and crystals of iodine one-half per cent. The above has the power of fixing the color in the germs.

Now take the section and fade out until it acquires a light blue color, in one per cent. hydrochloric acid alcohol, from this the section goes into sixty per cent. alcohol, and then into an aqueous solution of eosin and leave for about one minute. Now put it into ninety per cent. alcohol, then into absolute alcohol, and lastly into oil of cedar for examination, and you will find, in a properly colored specimen, that the tissues are colored red, and the bacteria, if present, of a deep azure blue with pale centers. In passing the section through this series of alcohols, great care must be used not to leave them immersed too long, as by so doing you will destroy the appearance of the bacteria, and render their recognition even to an experienced eye an impossibility.

In conclusion, there is one problem that is of great practical interest to the veterinary profession both in this country and abroad. That is, whether the disease in England, described by

lein as pneumo-enteritis contagiosa, and that described by Schutz of the Berlin veterinary school, as an infectious pneumo-
ta, commonly known as "schweineseuche," and that which I have
described, and is known in this country as hog cholera or swine
plague, are due to one and the same micro-organism! or whether
these two apparently so similar organisms, in their external char-
acteristics, still differ in their pathogenic action sufficiently to
account for the enterical lesions in the American disease, which
Schutz does not mention having seen in Germany; though they
correspond to those described by Schutz in all their chief
essentials.

It must, however, be mentioned that Prof. Schutz's examina-
tions were limited to a very small number of animals at the time
they were reported. On the other hand it may perhaps be
assumed, or demonstrated, in the future that climatic influences
have intensified the action of the micro-organism in America,
and that the disease was brought to this country by imported
hogs. Again, it is a well known fact that the swine of this
country and England are much finer bred than those of Ger-
many, which ought to indicate that our swine are more suscept-
ible to the action of the micro-organism than those of Germany,
and opens a large field for future research. Dr. Billings expects,
shortly, to be favored with a supply of virus from Prof. Schultz,
which he intends to pass through a long series of American hogs,
and thus demonstrate whether the virus increases virulence or
becomes attenuated, and what lesions it produces. In two
autopsies which I made November 4th, in which both animals
died of oedema pulmonum et glotidis, the lesions of the liver,
spleen, etc., were the same as usual, especially the lymphatic
glands. The large intestines in both cases were free from any
ulcerative lesions. There were to be seen upon the small intes-
tine a dozen or more yellowish red and blackish spots of variable
dimensions, which were hard to the touch, and on close examina-
tion of several of them, they either penetrated the serosa or ap-
proached to it. Upon cutting open the intestine, which in
the case was of a pale lead color, and in the other stained
yellow, numerous round worms from one inch to ten and

fourteen in length, were seen to be attached to these indented localities, the papilla of the parasite extending into an infundibuliform opening in the mucosa, which in all probability corresponded to the mouth of a gland or follicle, around which the tissues were swollen and indurated in a sharply circumscribed manner. Many of these places were the seat of more or less hæmorrhage; in others, which the worm had apparently left was to be seen an umbus, or circle of greyish yellow color, upon which lay, and was attached a black mass of about the size of a segment of a small pea. In the middle of the mass was a small pit or indentation which corresponded to the place where the worm had been attached. In some cases this black mass was in a process of exfoliation. These objects have the strongest, if not an exact resemblance to those often seen in the large intestine in swine plague, and might lead an uninitiated, unobserving and non-reflecting person to look upon a case of simple pneumonia in a number of a herd of hogs in which he should observe and feel the above lesions, without at the same time making a careful examination of the contents of the intestine, or especially if the worms should be absent, as in cases of swine plague; but an examination of the other organs, especially the lymph glands, and above all a microscopic examination for bacteria, would soon correct the hypothesis. It should, however, be mentioned that another essential point in the differential diagnosis between these objects and the neoplastic growth in the large intestines on swine plague, is the tendency to, or actual penetration of the walls of the intestine which occurs in the former and not in the latter. This experience goes to show that neoplastic and necrotic products of this circumscribed character are not peculiar to swine plague, and in either case are due to parasitic irritation, but it should not be forgotten that those due to the ascaridæ are invariably situated in the small and not the large intestine. Dr. Cobbold in his work on entozoa describes the parasite as "*ascaris suilla*." He says "it is closely related to the *ascaris lumbricoides* of the horse, and by some thought to be the same. Their habitat is the small intestine, sometimes found in the stomach; they perforate the intestine, and have been known

migrate into the cavities of the body, and also to be the cause of cystic abscesses, colic, epilepsy and other nervous affections. They resemble the common earth worm in size. Males are four to six inches long. Females ten to fourteen. Body marked by numerous transverse rings, attenuated toward either extremity. Anterior terminating in a well developed tripapillated mouth. Posterior in a blunt pointed tail. Female much broader than male. Diameter quarter of an inch. Male has a double specimen or penis, and caudal extremity of male has an accurate form. Female organs situated toward the lower part of anterior third, which frequently bursts after it has been placed in water."

RABIES IN CATTLE.

BY FRANK S. BILLINGS, V. M.

Director of the Experiment Section and Laboratory of the University of Nebraska.

It is well enough known to the public, and also to many of my professional colleagues, that I have nourished a most extreme scepticism with regard to the prevalence of rabies among our domestic animals, especially dogs, ever since my connection with the somewhat notorious "Newark boys," which case proved a most ridiculous farce for every one connected with it except myself, through the advantages gained by seeing so much of Pasteur's works and methods thereby.

Since being in Nebraska we have not been without several sensational eruptions of a similar kind, some of which have come to my notice.

One of these outbreaks, however, is especially worthy of the most serious attention, as after some four months cautious skepticism as to its true nature I have myself become convinced that they were rabies and nothing else.

HISTORY.—About 4 P. M. of Saturday, July 17th, 1886, a stray horse was observed crossing the highway, about seven miles from the town of Crete, Nebraska, and to enter the adjoining pasture in which some cattle were grazing, mostly two and three-year old

steers. The dog dashed in among the cattle, and began to haze them about and was observed to bite several of them, especially a heifer which it threw down. The farmer who saw the dog enter the pasture, and observed its singular actions, at once sent word to his neighbors, some of whom owned the cattle, so that it was not long before quite a number of persons collected. As it would be natural in such cases, the steers also charged upon the dog, but they were only successful in driving him into an adjoining pasture in which were also cattle, many of which he was seen to jump at and to bite some. In this way the sport, if I might call it so, continued until about 6 p. m., though several attempts were unsuccessfully made to shoot the dog, which was a shepherd until finally it took its way out of the pasture and was eventually found by a farmer in so very exhausted a condition, lying in an excavation in the earth, that he jumped on it and stamped it to death.

It is of great value to this case that these pastures bordered on the "Blue" River, and that all along its banks were numerous other pastures in continuous succession in each direction from the two in which the cattle bitten and hazed by the dog in question were situated. Though the grazing, weeds, shrubs and trees as well as water drunk by the cattle was of the same nature in all these cases, not a single animal died in any other pasture except the two mentioned during all the time that has elapsed since July 17th except one cow, from a well-marked case of parturient apoplexy, and one calf that was in a field near a house some distance from these fields, but which was on a line which the dog must have passed over in the course he was first seen to be coming. The same dog was observed to bite this calf by its owner, a Mr. Inhoff, a very intelligent farmer, and as I did not see it in person I will give Mr. Inhoff's remarks to me as a part of the history. The calf was six months old and was sick nine days; the symptoms shown corresponded to those reported by the other observer viz., great excitability, eyes appearing wild, constipation during the earlier part of the illness, terminating in diarrhœa, a frequent passage of urine in small quantities, desire to eat and drink, but could not swallow, the food and water returning by the mouth and

strils; was not unduly excited at the approach of those it was acquainted with, or by the house-dog to which it was accustomed, but on a flock of ducks getting into the field where it was, it immediately attacked them and tore and stamped several of them to pieces. It would also chase the hens, but could not catch them; it seemed to be partially blind, and was also somewhat paralyzed behind. The other owners report similar symptoms as the older cattle that died. They were very excited; would run with the other cattle, and rush blindly around and bellow furiously; they were also constipated and could not swallow. They would attack strangers, and even treed several persons who went in to observe them, but did not attack those they were accustomed to. When confined in a close pen they become quiet, except a continual bellowing and an occasional rushing against the barriers which confined them; but if the other cattle came near them, or strangers made any undue movement they would charge furiously. They all finally became more or less paralytic, sometimes in the fore-limbs, but more frequently behind.

Mr. E. S. Potter kindly furnished me with the following data in a letter dated September 10th, 1886.

1 heifer, died Aug. 15th, 1886—29 days after attack.

1 cow " " 18th, " 32 " " "

1 " " " 19th, " 33 " " "

1 steer, killed by me Aug. 19th, 33 " " "

3 " shot Aug. 20th, 34 " " "

1 steer, died Aug. 22nd, 36 days after attack.

3 cows, " " 22nd, " " " "

1 steer, died Aug. 24th, 38 days after attack.

1 " killed, by me, Aug. 28th, 42 days after attack.

On the evening of Nov. 4th, Major Birney of the State Sanitary Cattle Commission of Nebraska, came to me and told me that Mr. Vance, who had lost nine of the above cattle, had another attack in the same manner, and that I was requested to come to meet again. On the morning of the 5th I went, accompanied

Dr. Thomas Bowhill, M.R.C.V.S., who until recently has been in practice in Sioux City, Iowa, but has since then been my assistant, and Dr. W. A. Thomas, V.S., of this place.

Mr. Vance informed me that since Aug. 28th, six more cattle had died, at considerable intervals between each other, all presenting the same symptoms, and that he had one penned up in his scale-pen that had been ill since day before yesterday, that exhibited the same symptoms as the others. An account of this animal will soon follow. Before entering upon a consideration of my personal observations and the autopsies which I made, I wish to call attention to one fact in connection with the above cases which made me very skeptical as to the rabies theory, and yet I could not find a single moment upon which to fasten any etiological hypothesis other than that.

This was the fact, *that so many animals should die so nearly together with such short intervals between the deaths*, and as can be seen, *in one case three died on the same day, and that thirteen should have died within thirty-eight days from the time they were seen to have been worried by the dog*. From some very casual observations of the literature at my command, I have made a list of some 400 reported cases of rabies in cattle, the average period of incubation of which was forty-four days; the shortest, only one case of nineteen days. I could scarcely make it conformable to our knowledge of this disease, that as many animals should die in such a short period after being ostensibly bitten, and that the intervals between the deaths should be so short; so that I reported to the farmers, *"that as there was no other moment upon which we could place any etiological support, I thought they were right in adhering to their rabies theory, but that for the present I must say that I would not come to any positive determination."*

This report was made Aug. 28th; my conclusion that the disease must be rabies was made on Nov. 5th, for the following reasons:

1st.—Those that have died since, have presented exactly the same symptoms and they correspond in every iota to those laid down in the books for rabies in bovines.

2nd.—The intervals between the deaths had become greater and more extended from the time the dog was reported to have worried the cattle.

3d.—No other cattle from adjoining pastures had died since

4th.—Other cattle had since been placed in the same pastures at the dog was in and remained over two months since he was there with no evil effects.

5th.—The cattle had been out of the pasture for over four weeks.

6th.—The case seen by me Nov. 5th, which was taken on the 3d, or 108 days after the dog was present.

I will give the symptoms seen in this case to date for the above reasons, though I shall have to report them in considering in detail. The first thing observed by the owner, Mr. Vance, on the 3d was that the steer was very much excited, bellowed furiously, and was rushing around horning the other cattle in his feeding yard very furiously, and tumbling the pigs around right and left. It was lassoed with some difficulty and placed in the scale-pen where we saw it. It at once became more quiet unless approached by strangers, or by the pigs, when it would charge furiously. It could not swallow from the moment it was first observed, but would try to eat and drink. It was also constipated, but urinated frequently. It would try to eat and drink, manure and urinate.

On the morning of the 5th, when we saw it, it stood quietly in the pen, until I rushed quickly by and in close proximity to its pen, when it made a half blind charge against the pen. The pupils were distended, round-oblong, and the eyelids were very wide open, giving to those organs a wild appearance in comparison to the other cattle which we observed very carefully in the neighboring field. It had passed manure only once since yesterday, but urinated several times in the course of about twenty minutes, the urine being passed in small quantities; we drove some pigs in near the pen, when it became very much excited, running at the barriers. It soon became quiet again.

I then requested that some food and then a pail of water be given it. It took the ear of corn greedily and commenced to chew upon it, but let it drop out of the mouth again after having chewed it up.

On water being given, a most singular phenomenon presented itself, which I think has never been recorded by any other observer. *It tried to drink, but finding it impossible to swallow, it became more enraged than I had seen any of the others, and went*

for the bucket with great fury with its horns, smashing it all to pieces, and never leaving it until we finally got away the hoops and bail and a few pieces with a fork between the bars.

Now, to my mind, this exactly corresponds to the action of human beings, and goes to prove that rabies *can* occur in human beings, notwithstanding the doubts of Dalles, of Philadelphia, and my sincere friend Spitzka, of New York. A human being, if actually rabid, does not fear water, hence there is no such thing as hydrophobia; but such a person has a most intense fear of the pain of swallowing, or perhaps, more truly, of choking to death, from the experience of such attempts either with food or drink at such times; knowing these agonies, he or she dashes the offered glass, or food, out of the hand of the kindly meaning attendant, or if they have more will make an attempt to swallow, but in the agony caused by the intense spasmodic contraction of the pharynx and œsophagus, dashes the glass to the floor or the wall, in a corresponding manner to that in which this steer acted. The animal seemed to have an actual realization of its true condition; it wanted the water, no one can tell how much, it had not swallowed a drop in 36 hours at least, and because it could not swallow it, it smashed the offending object all to pieces. Once out of sight it again became quiet.

These phenomena, with my other observations, led me necessarily, to the conclusion that this must indeed be a case of rabies bovina, and that as all the symptoms seen in the other animal, with the exception of this one, were exactly of the same nature, that this also must have been rabies.

I will state that Mr. Vance had observed the same singular action of this steer every time he had offered it water.

In conclusion of these historical remarks, I will also say that Mr. V. reported once, that the house-dog also bit other dogs on the same day it worried the cows, two of which were at once killed, and that the owner of the one which was not killed lately told him that it went mad recently while he was on his way to go gunning, and that he at once shot it.

Though we must take this assertion *cum grano salis*, yet it still has some circumstantial value.

(To be continued.)

OFFICIAL REPORT ON TRICHINÆ AND CYSTICERCI IN PRUSSIA, IN 1885.*

Trichinæ and Cysticerci (measles) found in Swine.

190,481 less swine were examined this year than during 1884, hence the perceptible decrease in the number affected with trichinosis. While, in 1884, there was found one hog trichinous out of 1,741, the proportion in 1885 is as 1 to 1,852.

No. of swine examined.....	4,421,208
“ “ “ trichinous.....	2,387
“ “ pieces of American pork in which trichinæ was was found.....	101
“ “ swine in which cysticerci cellulosæ was found..	13,653
“ “ official pork examiners in Prussia.....	21,117

It should be known in the United States that the law for the compulsory examination of pork in Germany, while more generally applied in Prussia than any other German State, is not yet compulsory, but is still a sort of “local option” affair.

It is most easily carried out in such large cities as have public battoirs, where the law demands that all marketable animals shall be slaughtered when destined for human food. In such localities trichinosis is impossible in human beings from material slaughtered therein, but nevertheless is not unfrequently due to salted or prepared articles which are sold in the city or town and come from the provinces.

The outbreaks of trichinosis which have been made so much of by the foreign representatives of our government, have almost invariably occurred in small towns or villages where there was no compulsory examination, or where it had been evaded.

The only way by which the trichinosis in consumers can be prevented, aside from thorough cooking, is to make a law that no person shall cut up a slaughtered hog, even for his own use, *until said hog has been passed as trichina-free* by a competent inspector.

*Vierteljahrschrift für Gerichtliche Medicine, 1886, p. 384.

It is this home-fed, home-used, locally disposed of and uninspected pork that causes most of the outbreaks of trichinosis in Germany.

The increase of municipal (public) abattoirs in the large cities of Germany has been marked by an augmentation in the number of pigs slaughtered and consumption of pork.

The compulsory inspection of pork for trichinæ and cysticerci has been bound with an increased consumption in all places where it was so executed that the public had confidence in it. The importation of American pork has again become less than in the preceding year.

(The only way this difficulty can be overcome is by the exporting packing-houses organizing a suitable trichinæ inspection bureau in the works, and having the work done thoroughly; then branding the pork *non-trichinous*, and having it turned out so by experience. It will not be found as expensive an undertaking as many of them assume. Women make first-class trichinæ inspectors.)

Trichinosis in Human Beings.

In June, 1885, in Stettin, a merchant, his wife, two children and maid-servant became trichinous from eating pork *in an absolutely raw* but spiced and freshly salted condition. All recovered.

In the town of Forst, on the Oder, forty persons had trichinosis; two severely; *the pork was from a privately slaughtered hog*, that was not inspected.

In Drossen, three mild cases. In Königsberg, a workman died. In Soran, a few mild cases. In Ost-Sternberg, fifteen of same character. In Merseberg, also fifteen cases. In Berlin trichinosis only occurred in one family, that of a dentist; *they ate a ham presented them by a friend from the country*. The wife became ill on the 4th of February, 1885, and died the 23d. The dentist, the four children and his two assistants and servants, were also quite ill, but recovered. All the patients presented acute gastric disturbance, followed by characteristic rheumatoid complication of the muscles and tumefactions in the face. The dentist and three of the children were confined to the bed.

The number of swine affected with cysticerci (measles)—3,653 out of 4,421,208—is probably rather startling to Americans, as we have no pork inspection in this country. It should be no less instructive, however, as the presence of the tape-worm, *tænia solium*," is no less comfortable to an American than a German.

The number of "measly" swine was greater at the Berlin abattoir during this year than the previous.

Annual Report of the Public Abattoir of the City of Berlin, Germany, for the year from April 1, 1884, to March 31, 1885.

The civil officials of this institution are six clerks in the office, eight supervisors and forty under officers: fifty-four persons.

The *technical officials* are: 1 Superior Veterinary Inspector, 10 Assistant Veterinary Inspectors, 2 Sub-Assistant Veterinary Inspectors, 1 veterinarian as Chief of the Microscopic Examining Department, 30 persons to collect specimens from the animals slaughtered for microscopic examination, 99 persons as microscopic examiners in the laboratory, 4 superintendents of the different slaughtering divisions, 8 substitutes, 10 branders of animals. 1 registration clerk of the results of the examination: total, 154 persons. The institution also employs 136 men, who have constant employment to keep it clean, and 325 drivers of animals.

Number of animals entered on the books as received on the rounds:

	1881.	1882.	1883.	1884.
	April to June.	April to June.	April to June.	April to June.
Cattle....	34,532	46,379	45,813	43,045
Hogs....	78,610	84,112	86,565	93,170
Calves....	32,516	32,862	30,246	33,252
Sheep....	168,326	215,593	241,506	232,338
	July to Sept.	July to Sept.	July to Sept.	July to Sept.
Cattle....	25,737	30,581	30,870	29,542
Hogs....	86,273	95,922	92,990	90,622
Calves....	26,030	21,758	26,757	25,201
Sheep....	283,420	270,419	259,126	275,034

	Oct. to Dec.	Oct. to Dec.	Oct. to Dec.	Oct. to Dec.
Cattle....	28,190	33,022	33,692	33,450
Hogs....	120,469	121,105	127,801	132,369
Calves...	25,340	21,739	23,839	23,415
Sheep....	77,419	59,096	65,262	59,195
	1882.	1883.	1884.	1885.
	Jan. to March.	Jan. to March.	Jan. to March.	Jan. to March.
Cattle....	37,915	40,996	40,075	41,392
Hogs....	107,543	102,959	115,372	118,778
Calves...	28,051	25,664	26,506	28,742
Sheep....	120,895	108,151	120,880	102,082
Totals for the respective years.—				
	1881-'82.	1882-'83.	1883-'84.	1884-'85.
Cattle....	126,374	150,978	150,450	147,429
Hogs....	392,895	404,098	422,728	434,939
Calves...	111,937	102,023	107,348	110,610
Sheep....	650,060	653,259	686,774	668,649

For consumption in the city of Berlin there were used, and nearly as could be ascertained, in the year 1884-'85 :

105,675 cattle,	an increase of 100,850 over 1883-'84.			
345,938 swine,	"	"	318,228	" " "
109,923 calves,	"	"	104,348	" " "
282,491 sheep	"	"	229,174	" " "

783 persons were occupied in slaughtering swine during the year 1884-'85, and 453 in other houses.

The following animals were condemned by the veterinary police, and removed from the abattoir to the police slaughter house : 1,222 cattle, 1,258 swine, 118 calves, 1,400 sheep ; total 3,998. 691 of these animals were dead on arrival, and 241 were killed and bled (when too near dead) to be suitable for human consumption.

It should be mentioned that the greater number of the cattle were not condemned on account of veritable disease, but on account of not having the proper attention from whence they came.

Of the above 3,998 animals, there were sent to Knodher's a totally unsuitable for food : 197 cattle, 742 hogs, 104 calves and 547 sheep.

Of the animals slaughtered there were condemned as unsuitable: 74 cattle, 2,338 swine, 19 calves and 48 sheep.

The whole number of animals which were totally condemned was, therefore: 273 cattle, 3,090 hogs, 123 calves and 1,645 sheep; total, 5,131.

Number of parts of individual animals condemned..... 2,470
(Of which were killed at the police slaughter-house,
969 livers and 1,080 lungs.)

Number of parts condemned by the abattoir inspectors in
the houses of that institution.....41,209

Total pieces.....43,679

Diseases for which animals were condemned in the police slaughter-house:

Tuberculosis, whole carcasses	111, 106 cattle,	123 organs of same.		
puget, " "	170 swine.			
Distoma hepaticum, } (liver-flukes)	" 125 animals,	554	" "	
uterus, whole	" 13	"		
Bloody or veined, "	" 176	" 409	" "	
Cysticerci,		684	" "	
Other diseases, " "	25	"		

Total whole animals, 620

Other diseases.....700 " "

Total, 2,470 " "

In the slaughter-houses of the abattoir were condemned, on account of tuberculosis:

Cattle.....	64 animals and 2,932 organs.
Calves.....	2 "
Swine.....	297 " " 3,410 "
Total.....	363 " " 6,342 "

On account of the presence of echinococci, were condemned at the abattoir 15,623 organs. On account of the presence of liver-fluke were condemned at the abattoir 8,453 livers: repre-

senting the slaughter of 6,193 cattle, 2,073 sheep, 163 swine and 24 calves.

On account of the presence of inflammatory processes there were condemned the lungs of 2,165 animals and the livers of 807.

The foot and mouth disease was found present in 44 cases at the abattoir and 129 at the police slaughter-house.

199 swine trichinous, or 1 to 1,330 of the total number inspected. 1883-4 the percentage was 1 to 1,131.

1,180 of the swine slaughtered at the abattoir were measly.

1,028 swine-lungs and 186 sheep-lungs condemned for filaria.

For inflammatory processes 2,165 lungs and 807 livers of the above animals.

On account of actinomycosis caused the condemnation of 110; lime-concrements of 50; rouget, of 247 swine at the abattoir.

By the "police slaughter-house" the reader will understand an especial building upon the grounds of the abattoir to which all animals are sent that are condemned while alive, on account of the presence of disease, or on account of suspicious symptoms; all others are slaughtered in the houses of the butchers slaughtering at the abattoir.

The whole institution is the property of the City of Berlin; the municipal officers regulate it and appoint all the inspectors who hold their positions during life or good behavior, and are subject to a pension when they become old or if they become disabled during service.

The common laborers are appointed by the respective civil or veterinary chiefs, according to the department of work they come in. B.

EPIZOOTIC ABORTION.—Prof. Nocard of Alfort has presented a paper to the Academy of Medicine of Paris upon epizootic abortion of cows. He presents the theory of the disease as one of a *microbeian* nature of the foetus, and to which the pregnant female is an entire stranger.—*Bulletin de l'Acad. de Medec.*

CONTAGIOUS PLEURO-PNEUMONIA.

BY PROF. D. McEACHRAN.

MONTREAL, Nov. 9, 1886.

Dear Doctor :—I have just received your esteemed favor, and in reply I beg to express regrets that I am unable to be present at your convention. Be assured that the object of your meeting has my most hearty sympathy. You ask me to give you some suggestions based on my experience of the disease. Knowing as I do that the disease is far more widely spread than even the members of your convention have any idea of; knowing as I do how very insidious a disease it is, and how much cattlemen, small owners at least, will do to convince themselves and others that the disease is not among them, as well as the ill-defined symptoms which mark its initial stages, so ill-defined, in fact, that it may be in progress for months in a herd before an expert is asked to examine them. This feature of the disease was well illustrated in the quarantine at Quebec, where in each instance the men in charge positively affirmed that no disease existed in their herd. One man was so thoroughly convinced of this that he went so far as to defy the local Inspector to kill any of them, and it had to be delayed till I arrived. In fact, so ill-defined were the symptoms in Mr. McCrae's bull, "Independence," that a professional friend who accompanied me, on a casual observation of him as he stood, looking fat and slick, remarked, "You must have some nerve to kill such a valuable animal while he looks so well." In fact the Allan Herd of Polled Angus could not possibly look in better condition than at the time we killed them. Yet there was not one free from the pathological lesions of the disease. Does this not point out a difficulty which meets you under your present lamentable circumstances, of tracing its radiation from the great centre, Chicago? How many infected animals have been carried over your great railway lines to every point of the compass, spreading the contagion wherever they have gone? yet no one, not even their owners, being aware of the dangerous plague-stricken animals they were thus carrying to their healthy herds.

This great question must be looked in the face squarely—no greater ever was discussed on the American continent ; it involves not merely the protection—nay, the saving from destruction of billions of money, but, more important still (next to flour), the most important article of the food supply of a quarter of the population of the globe.

As it appears to me you have first to overcome all those influences which are well known to obstruct all effective action in the direction of eradicating this disease. Bring together all the vested interests which are menaced by the plague, either directly or indirectly, notably the cattle breeders and buyers, the railroad corporations, and stock-yard companies, and let them calmly consider the inevitable result of trifling with such a plague. Let them unanimously agree that, cost what it will, they resolve that every trace of this disease must and shall be destroyed.

Let the United States Government so amend their laws, or the Constitution even if need be, that the Federal Government can and will control such a ruinous plague. Let each State quarantine her borders against each and every State in which disease exists, and those States which permit free transit of animals from infected States into or through their territory.

These are matters for your Senators and Congressmen to discuss, but let the representatives of the great cattle industries now assembled in Chicago, as well as the railroad companies and stock-yard corporations, and veterinarians, all unite in urging immediate action by both Federal and State Governments.

An organization should be immediately formed in every State and Territory to discover the disease and disclose it wherever found. Even if it has reached the unfenced ranges of the West, it can be stamped out, if properly taken in hand, by energetic men backed by proper laws and sufficient funds.

Now, what should the veterinarians do? They should endeavor to acquire all the facts possible with reference to this disease, they should freely discuss and unanimously agree upon a line of policy to recommend to the combined authorities above alluded to; let there be no differences of advice, let us remember our motto, *Vis unita fortior*, and as one of your number who has

and considerable experience with the plague, I would say *stamp out*, kill and *cremate* every diseased animal, every animal that has been in contact with deceased animals, burn every building, every fence, bag, blanket, bucket, shovel, fork, broom, brush, men's or women's clothing, hay, straw, manure—leave no vestige of it to exist. Railroad cars must be regularly scraped, washed, and lime washed and disinfected after every shipment from suspected districts.

Urge on the government to make inoculation illegal—to prohibit importation from any country where it is practiced, for rest assured, to this damnable practice is attributable in great measure the continuance and repeated outbreaks of the disease in those countries where it is permitted. Shame, I say, on any member of the profession who would recommend it on this continent. Let me assure you that if the plague were stamped out to-morrow, probably at a cost of millions, import and distribute but a few "recovered" or inoculated cattle, and in a very few months millions more would be wanted.

Let any sensible man examine the carnified lung of pleuro-pneumonia, and ask himself the question, can that lung ever become sound again? It cannot, he must reply. Then must not that diseased portion of lung not contain, temporarily encysted, may be, millions of the disease germs, which not only may, but will, be coughed up sooner or later, sowing the seeds of an occult outbreak, which fails to be traced to contagion, as no animal known to be diseased was introduced to the herd. Members of the profession, don't fail in your duty in this respect, warn the cattle owners and authorities in no uncertain language of the deception and danger of such a practice.

The subject of compensation is an important one, yet one about which there cannot be two opinions. Unless it is liberal a difficulty arises in getting owners to report the disease in their herds. The compensation in my opinion should be as near as possible to the value of the animal. Where it is not the temptation to conceal the disease, and quietly sell out those which have been in contact, is very great.

The difficulties to be overcome in dealing with this plague are

very great, but with the intelligence and wealth of the great American people, in whose dictionary the word "impossible" has no meaning, they have only to be fully aroused to the importance of the subject to have it followed up until no vestige of it remains in the country, and such measures enforced in future as will prevent its reintroduction from abroad, and to this arousing let the convention devote themselves.

REPORTS OF CASES.

MALIGNANT WOUNDS OF FRONT LIMB.

BY W. H. GRIBBLE, D.V.S.

Inclosed find description of case which is very puzzling to me as to the cause.

The farm on which it occurred was rolling land, with a good creek running quite swiftly through it; the horse had not been stabled, the weather was not wetter than our usual summers.

Several times since the death of the animal, the owner and several neighbors have asked me, and have hinted that such must be the fact, viz.: That the calomel which was given the horse, and his then getting wet, caused the trouble.

I can find no such action of any preparation of hydrarg.

A gray gelding, thirteen years old, fifteen and one-half hands high, quite poor (no external signs of melanoses), had worked hard from spring until the first part of July, when he was turned to pasture, and instead of becoming lively, as was usual with him on resting, he became languid, dull, with changeable appetite, continued loss of flesh, and when put to any work seemed unable to perform it, and what was peculiar, he would stand for hours in water knee deep.

This went on for four months, when we were called. We found the animal constipated-anaemic and with upper molars very sharp, in fact, so much so that callous places had formed on mucous membrane of mouth; pulse and temperature a little elevated; could find no abnormal heat about the feet, which standing in water led us to suspect.

We diagnosed the case as indigestion due to imperfect mastication; primary cause, sharp teeth. Our prognosis was that the animal in a short time would be in a working condition.

We first attended to the teeth, then gave:

℞ Aloe Barb. ʒiv.
Hydrar. Sub Mur. ʒi.
Ext. Colocynth Comp. ʒi.
Glycirriza, Q. S.

M—Fiat Bolos, No. 1, followed by:

Gentian Rad. P. ʒij.
Ferri Sulph. ʒiss.
Nucis Vom. ʒij.

M—Sig. Cochlea Magnum Bis Indies.—Give in wet oats.

Under this treatment the animal improved, appetite became good, mucous membranes regained their color, etc.

About two weeks later we were again called to see our patient, which the owner had not seen the day before. We found him with temperature 105°, pulse 30, limbs swollen, hot and painful, and with a gummy exudate coming from them, which dried and stuck to the hair.

This exudate on being rubbed off, carried with it the epiderma and some hairs, leaving the limbs sore in spots. The right anterior limb was swollen and more painful than the others, being constantly raised and lowered, and nothing could induce the animal to bear any weight upon it; still an examination revealed no different trouble in this limb than in the others. We ordered warm antiseptic local applications and internally sedatives.

In a few days time, pulse and the three limbs least affected became normal, but the other gradually grew worse, until the skin and connective cellular tissue from the coronary circle to the elbow joint, all around the limb, and several other patches between carpus and foot, became gangrenous (dry and hard) and sloughed off, leaving the tendons in plain sight. Fungous granulations sprang up which we could not control, and all treatment used by us was of no avail in preventing extension of sloughing

as it continued until it separated the hoof, together with the coronary cushion, completely from the limb.

All through this trouble the appetite remained firm, and had the animal been a mare, we would have continued treatment and watched results, but under the circumstances we advised him shot, which advice the owner in a few days followed.

We would ask to have this disease named to us, and also that the readers of this article give us their experience of similar cases. It seems to us that the trouble must have been some specific blood disease, which lay dormant until tonic treatment stimulated it to action.

We have seen no literature on the subject except a Canadian article, which described a case almost identical, but attributed it to frost, which in our patient is entirely out of the question.

VERY LARGE CYSTIC CALCULUS EXPELLED BY NATURAL EFFORT.

BY A. W. FINLEY, D.V.S.

The spontaneous efforts of nature to relieve an organism are sometimes very wonderful and almost beyond belief. The following is an illustration: One of my customers has a mare, which at least for the last twelve months, has shown trouble in her function of micturation. She has been straining more or less to urinate, and at times has suffered from a constant dripping of urine, lasting for several days, during which the animal was constantly wet and nasty; and again she would seem to improve and then urinate freely for a few days. Latterly the straining has been more frequent, the effort more vigorous, and her difficulty in urinating more marked. One morning the gentleman on going to the stable noticed that the mare had stopped straining. The lips of the vulva were covered with blood, and on looking on the floor, he found a large stone, which he brought to me. It weighed ten ounces, and measured between eight and nine inches in circumference. The calculus is roughened on the outside, except on one surface. The animal had passed it during the night, simply by muscular straining. It seems hardly possible, but it

proves to what extent the urethra of a mare can be dilated. I have formerly thought instruments used in breaking stones in the bladder were enormous in size, but their dimensions become insignificant when compared with the rough calculus expelled by simple natural effort in the present instance.

EXTRACTS FROM FOREIGN JOURNALS.

HYDROTHERAPY IN PARTURIENT APOPLEXY.

As a consequence of a series of interrogations made in relation to the comparative value and the best results obtained by various methods of treatment against parturient apoplexy, the *Recueil de Medecine Veterinaire* publishes in the July number a statement of certain conclusions which seem to endorse the value of the treatment inaugurated by Mr. Hartenstein in the use of hydrotherapy. This consists in associating with the usual remedies the application of cold water, either in douches, or by cold compresses of blankets over the whole body of the animal, including the head. A number of successful cases are recorded where the treatment was followed by rapid recovery, some of them being of the most desperate character. Mr. Biot reports one of these cases, in which, after failure of his usual treatment, he *miraculously*, as it were, saved the patient by the use of hydrotherapy. The use of cold water by Hartenstein in the treatment of certain diseases may well be made the subject of experiment, and, by all accounts, has proved most beneficial when other forms of treatment had failed.—*Recueil de Med. Vet.*

VIRUS OF CONTAGIOUS PLEURO-PNEUMONIA AND OF INFLUENZA.

Prof. Lustig, of Hanover, has found in the lymph and inflamed parts of the lungs of diseased cattle four kinds of microorganisms. These are: 1st. Short and thick bacilli, which liquefy gelatine. 2d. A species of micrococci which do not liquefy gelatine, but which, when cultivated with it, form deposits resembling cooked albumen. 3d. Micrococci like the preceding, but of yellowish color. 4th. Short bacilli, of an orange color, which seem

to be moving. In the inflamed foci of the lungs of horses which have died from typhoid pneumonia, as well as in the pleuritic exudation and the nasal discharge, he has found, after cultivation, six species of micrococci, as follows: 1st. A greyish culture which liquefies gelatine, like the bacillus of cholera. These cultures were not pure, as they contained bacilli of other species. 2d. A yellowish culture, liquefying gelatine, but more slowly than the other. It is composed of strong, short, ovoid bacilli, but, as it also contains other germs, it is not pure. 3d. A whitish culture, inactive on gelatine, and having upon it whitish deposits. This contains very small micrococci. 4th. A pure yellowish culture, inert on gelatine, and different from the preceding except in its color. It contains long, strong, ovoid bacilli. 5th. A pure greyish culture, inactive on gelatine, forming on its surface a deposit composed of small ovoid bacilli. 6th. A pure yellowish culture, differing from the above only by its dry and brilliant appearance. These cultures grow slowly and only when exposed to free air; and more rapidly on gelatine than on blood serum. In cultures by inoculation, the vegetations appear on the surface only. The small ovoid bacilli, colored to the violet of gentian, resemble micrococci or diplococci. Their bacillar form is recognized only by the use of Ehrlich and Ribbert's mode of coloring. This is a saturated solution of dahlia in 100 grains of water, 50 of alcohol, and $12\frac{1}{2}$ of acetic acid. Dr. Lustig thinks these bacilli of pure cultures form the virus of influenza.—*Recueil de Med. Vet.*

DEATH FOLLOWING THE RUPTURE OF AN ANEURISM OF THE PHARYNGEAL ARTERY.

BY M. BLAISE.

The subject of this case was a horse which had been for about a month suffering with an attack of pharyngeal angina. He was in a dreadful condition. The head was well extended on the neck; there was extensive œdema of the entire parotid region, scarifications made through this and cauterized with the pointed iron, being followed by the discharge of a sanious pus, of a gangrenous nature. There was a nodulated cord, resembling a farcinous

rd, running from under the maxillary space to the face. The conjunctivæ was of a deep wine color; the tongue and the gums swelled, and an abundant salivary discharge of an infectious odor escaped from the mouth. The animal was very anæmic and reduced in condition, and all forms of treatment seemed to be useless. In compliance with the owner's request, however, the following directions were given: Washing off the discharges and the purulent collections; dressing of the ulcers with phenic water; sterilization of the pseudo-farcinous ulcers with tincture of iodine; acidulated gargle; emollient and stimulating fumigations; an electuary of tincture of cinchona and carbonate of iron. This seemed to help him somewhat, but after about eight days the animal, one morning, probably choked by some hay that he was unable to swallow, was taken with a violent paroxysm of coughing, which gave rise to an abundant hemorrhage, and this carried him off in less than ten minutes. At the post mortem it was found that besides all the lesions of active pharyngeal inflammation, a large aneurism of the pharyngeal artery had existed, the rupture of which had ended his misery.—*Recueil de Med. Vet.*

TRICHINÆ IN AMERICAN HAMS.

By E. ERMANN, of Hamburg.

Experimenting upon the action of trichinæ, from both fresh meats and salted hams, the author was brought to the conclusion that the inspection with the microscope of the meat of American hams is deficient, so far as the results obtained go, and that, under that condition, trichinæ could not be injurious to human beings. He fed two rabbits for several months with the meat of American ham, full of trichinæ, and they remained healthy, their muscles, when examined by the microscope, being found free from parasites. On the contrary, three other rabbits, fed with fresh meat containing trichinæ, became affected with trichinosis.—*Cent. Alleg. Gesemdt. Thierzt.*

POISONING BY LEAD IN HORSES.

By DR. SCHMIDT.

In places where lead is worked, a certain quantity of oxide of lead escapes through the chimneys, and is thrown on the sur-

rounding vegetation in the form of a grayish-blue powder, and when these plants are eaten by horses, they may give rise to symptoms of poisoning. According to the author, the action of the lead does not cause symptoms similar to those in man, such as colics; but he holds that the poison acts upon the laryngeal nerves. While at rest the animal does not seem to be sick; but if put in motion, there is a slight whistling and dyspnoea, which manifest themselves and continue for some time after the animal has ceased to exercise; but, after ten minutes, all pass away, and do not again appear unless the animal is again moved. These symptoms are also observed during mastication, and especially when eating hay. They vary in intensity according to the quantity of lead absorbed; but the difficulty of breathing is always present, and is so characteristic that there is no difficulty in diagnosing saturnine intoxication from ordinary roaring. The chemical analysis of the organs of these animals—such as the kidneys, liver, spleen, stomach, and intestinal walls—reveals the presence of the lead. No treatment seems to be of any benefit even at the outset. Tracheotomy appears to be the only means of continuing the usefulness of the horses for any great length of time.—*Rundschau*.

CONTRIBUTION TO THE TREATMENT OF IMMOBILITY.

BY M. KLEMM.

After using the sulphate of eserine in sub-cutaneous injections, in doses of from ten to twenty centigrammes, without obtaining any satisfactory results in the treatment of immobility, the author had recourse to the hydrochlorate of pilocarpine, in doses of one gramme in medium-sized animals, and one gramme and twenty centigrammes in larger ones. The sialagogue and sudorific action of this substance seemed to modify the cerebral circulation for a lasting period. The author claims to have obtained radical cures by this treatment. His numerous experiments and observations have brought him to the following conclusions:

1st. At the outset of the disease, the treatment with pilocarpine is followed nearly always by radical cure, and the cer-

ity of the cure is proportioned to the promptness with which administration of the remedy follows the commencement of disease.

2d. The hypodermic injection of pilocarpine rapidly relieves subacute inflammation of the brain, and prevents the immobility which is often one of the terminations of the disease.

3d. Where the immobility has existed for a long period, and of medium intensity, the treatment by pilocarpine does not prevent the occurrence of another attack; but the second attack is generally relieved permanently by another injection of the drug.

4th. Very old cases of immobility have always been somewhat improved by the pilocarpine, but radical cure has never been obtained.

To resume: the treatment recommended by M. Klemm prevents the complication of immobility in cases of chronic encephalitis, cures commencing immobility, and improves the symptoms of the old form of disease. Without being a heroic or infallible mode of treatment, it has proved itself to be a really useful one.—*Rec. de Med. Vet.*

TREATMENT OF ITCH IN SHEEP BY NICOTINE.

Doctors Kaiser and Arnold, of Hanover, have experimented with this drug in the treatment of the disease in question. The sheep were placed for three minutes in a bath, containing two parts in three hundred, and then well rubbed with a brush, and eight days after another bath was administered, and the animals were radically cured. Nicotine acts better than tobacco in the treatment of parasitic cutaneous diseases of our domestic animals.—*Thierzt.*

TREATMENT OF COLICS IN HORSES.

BY M. KLEMM.

He uses pilocarpine, in sub-cutaneous injections, in doses varying from five to eight denigrams, increased to one or two grammes, according to the size of the animal.

In the beginning of intestinal colics pilocarpine always gives relief. The pulse remains from 36 to 40, and the appetite returns. Relapse has never been observed. The sooner it is used, the quicker will be the relief.

When the colics have existed for some length of time, success is not so certain ; but then, if relapse occurs, it will subside with a second application of the treatment. In very severe attacks, of long standing, it at least always insures improvement.—*Arch. of Thierheilk.*

CORRESPONDENCE.

VETERINARY LEGISLATION.

Editor American Veterinary Review :

"I suppose if I give you the earth you won't be satisfied unless I fence it in for you." This was a remark I heard one boy make to another, the other day ; and it impressed me at the time, as very indicative of some people's disposition, and when I read Dr. Lowe's letter, in your last issue, on the above subject, I could not but echo the boy's unique sentiment. That the gentlemen has a perfect right to give expression to his own ideas as to what should be, and what ought to be, I nor any one else has a right to question, but when he begins to pick to pieces the result of the hard work of others, he must certainly expect to be brought up with a sharp round turn. He speaks of the Act, lately passed in New York State, as putting the college graduate of the nineteenth century and the illiterate, uneducated horse doctor on an equal footing. I really can't believe he expects us to endorse such an idea. I hold there is no power in the universe that will place the uneducated "on an equal footing" with the educated, and no legislative power can make a *gentleman* of any one. I would to God it could, as I would then devote the balance of my days in working for such legislation, if only for the reformation of some of the graduates. He admits that there are some non-graduates more

worthy than some graduates, and in the same paragraph speaks of drawing the line between the two, and seems to forget there are other ways to kill a cat than choking it with melted butter. Is it well for *us* to attempt to draw the line? Had we not better leave it to the *public*, as "by your good works ye shall be known," (I may be a little out on this quotation; if I am, it is due to lapse of time.) When will an uneducated man feel so small as when in the company of educated men. My observations have proved a realization of this fact by many who, if scientifically uneducated, are not fools, and so remain observers, rather than lay themselves open to ridicule. So much, as regards accepting worthy non-graduates as member of any organization. Now as to giving them certificates as to their worth, because they are members, does not necessarily follow in all cases, as is the case with the New York State Veterinary Society, who do not issue certificates, so that accepting any one as a member does not give him any qualification or power to register under the Act lately passed in that State, neither does that body accept all that apply even for membership. Whether the Veterinary Medical Association of New Jersey does, I am not able to say. He says, "Before the bill was passed a quack was a quack, and a graduate a graduate;" so they are now and always will be, yet the bill says, "*No person* shall practice veterinary medicine and surgery" * * * "*except* he be duly *registered*," and since the eleventh of last month, none can register but graduates. How many non-graduates will there be practising in New York State after ten or twenty years, and how many have been shut out because they failed to register previous to the date fixed? I know of four in Brooklyn, where the law will not be allowed to die, and it behooves others to look after their own interests in their respective counties. I would remind Dr. Lowe that the bill does not say that a graduate is "obliged" to consult with irregular practitioners, and in conclusion would say, so far as his opinion, given in the last two lines of his letter, goes, I am glad it is not a professional one.

Yours very truly,

W. H. PENDRY, D.V.S.

ARMY VETERINARIANS.

Editor American Veterinary Review:

While the severity of Dr. Pendry's references, in his letter published in your last issue, to the condition of the army veterinary service has to be acknowledged with a considerable amount of justification, there may perhaps, or I should say *must* be some call for such a deplorable state of affairs, and would it not be worth while to try and find the cause. For the last two or three years there has been a special committee, appointed by the United States Veterinary Medical Association, to look after this particular subject, and I understand that this committee have never reported. Why is it? Have they ever moved in the matter? Perhaps they have trusted their Washington colleague to do all the work. If, so, this no doubt would account for the result, as it is hardly policy to send a punished child to ask the school-master for favors. In short, is it not a fact that one of the committee cannot ask favors at court. Why is it? Cannot you induce some of the committee to "give it away."

Yours truly,

VETERINARIAN.

LIST OF VETERINARIANS

REGISTERED AT THE COUNTY CLERK'S OFFICE, NEW YORK CITY.

GRADUATES FROM FOREIGN COLLEGES.

<i>Names.</i>	<i>Colleges.</i>
Carmoch, W. T.....	Royal College Veterinary Surgeons, London.
Heard, John M.....	" " " " "
Kunz, Adolph.....	Geisbergh, Weisbaden.
Kunzli, Joseph.....	University of Zurich.
Liautard, Alex. F.....	Imperial Veterinary College of France.
Lockhart, Alex.....	Royal College of Veterinary Surgeons, London.
Von Bothmer, Albert.....	Emperor Austrian College, Vienna.
Total.....	7

GRADUATES FROM AMERICAN COLLEGES.

<i>Names.</i>	<i>Colleges.</i>
Birdsall, Theodore.....	American Veterinary College.
Breder, Edwin S.....	Columbia " "
Burden, Chas.....	American " "

<i>Names.</i>	<i>Colleges.</i>		
Murgett, Eugene.....	American Veterinary College.		
Mauder, John S.....	"	"	"
Marum, Emile.....	Columbia	"	"
Mitcherson, W. D.....	American	"	"
Mattanach, C. C.	"	"	"
Mattanach, John J.....	"	"	"
Mates, Wm. J.....	"	"	"
Mosgrove, Jas. R.....	Columbia	"	"
Mrane, Lemuel W.....	American	"	"
Mochran, David W.....	"	"	"
Muff, W. E.....	Columbia	"	"
Moyle, Thos. H.....	American	"	"
Modin, Alphonso J.....	"	"	"
Muane, John, Jr.....	"	"	"
Mrey, Mark L.....	Columbia	"	"
Mield, Samuel S.....	American	"	"
Magg, F. H.....	"	"	"
Milay, R. A.....	N. Y. C. of Vet'y Surgeons.		
Milay, R. W.....	"	"	"
Mamill, Jas.....	Columbia Veterinary College.		
MJohnson, Sam'l K.....	American	"	"
Memp, Jas. S., Jr.....	"	"	"
May, Richard.....	"	"	"
Meyer, Chas. A.....	Columbia	"	"
Murray, John J.....	American	"	"
McNicol, Jas. E.....	"	"	"
Miehener, Chas. B.....	N. Y. C. of Vet'y Surgeons.		
Mostrand, Elbert.....	"	"	"
Motto, Martin J.....	American Veterinary College.		
Parsons, Edwin A.....	Columbia	"	"
Robertson, A. K.....	American	"	"
Moula, Wm. A.....	Columbia	"	"
Mstrange, Andrew.....	American	"	"
Mvarner, Geo. L.....	"	"	"
Mveir, Robert.....	"	"	"
Mvalton, Frank.....	Columbia	"	"
Mvalrath, J. A.....	American	"	"
Mwallace, John C.....	Columbia	"	"
Total.....	41		

GRADUATES FROM CANADA COLLEGES.

<i>Names.</i>	<i>Colleges.</i>		
Farley, Oliver C.....	Montreal Veterinary College.		
Machan, David.....	Ontario	"	"
Thompson, J. B.....	"	"	"
Total.....	3		

NON-GRADUATES, BUT MEMBERS OF VETERINARY MEDICAL SOCIETIES.

<i>Names.</i>	<i>Societies.</i>				
Cattanach, Jas. S.....	New York County Veterinary Medical Society.				
Delisser, Geo. P.....	"	"	"	"	"
Jacobus, John H.....	"	"	"	"	"
Ogle, Ralph.....	"	"	"	"	"
Ogle, Thos.....	"	"	"	"	"
Palmer, Geo. G.....	"	"	"	"	"
Stokes, Jas. R.....	"	"	"	"	"
Total.....	7				

NON-GRADUATES AND NON-MEMBERS OF VETERINARY MEDICAL SOCIETIES, BUT
REGISTERING BY AFFIDAVIT.

Andrews, John.	Laughlin, George H.
Birdsall, Benjamin.	Loomis, Edw.
Brack, William E.	Lawler, James.
Betts, Samuel S.	McDornan, Daniel W.
Boomer, Hiram E.	Mooney, Nicholas G.
Betts, Samuel S., Jr.	Murphy, Michael.
Brown, Charles H.	Murphy, Patrick.
Bruttons, J. D.	McKenna, Patrick.*
Bacon, John S.	Masterson, William.
Bunell, Charles G.	McDonald, Christopher.
Collins, Patrick C.	McAdams, John J.
Conklin, William A.	Nichols, George D.
Dunphy, Richard.	Ogle, John F.
Duane, Richard F.	Ogle, Samuel D.
Ennever, William C.	Oscar, Samuel.
Earl, Henry E.	O'Halloran, Jas.
Ferrier, Peter J.	Palmer, George.
Fisher, Elijah M.	Riley, John.
Farrell, William A.	Stott, William.
Farrell, John.	Serini, Philip J.
Foulk, Martin H.	Shea, Joseph.
Fairchild, Robert.	Savage, James, Jr.
Flynn, James W.	Swan, Warren.
Gurney, William H.	Sielman, Charles.
Glover, H. Clay.	Tedford, Stephen J.
Graley, Benjamin F.	Tavares, Hubert A.
Gaynor, Edw.	Van Tine, William H.
Heffernan, Thomas.	Vetter, Stephen.
Haggerty, J. W.	Vaus, James R.
Humphreys, Frederick.	West, Samuel.
Humphreys, Frederick H.	Waite, Herschel A.
Habberlin, John J.	Wilkens, Alfred.
Hannon, Stephen.	Walsh, Thomas.
Hough, Isaac, Jr.	Wilson, Augustus A.
Lynn, Robert George.	

Total..... 69

Grand total..... 127

* Made his cross—did not sign his name.

REGISTERED IN BROOKLYN, KINGS COUNTY.

GRADUATES FROM FOREIGN COLLEGES.

*Names.**Colleges.*

Leard, Edward H.....	Veterinary College of Edinburgh.
McLean, Lachlan.....	“ “ “ “
Mageman, L. V.....	Royal College Veterinary Surgeons, London.
Robertson, Thomas.....	“ “ “ “
She, Thomas H.....	Ontario Veterinary College.

GRADUATES FROM AMERICAN COLLEGES.

*Names.**Colleges.*

Bell, Lucian T.....	American Veterinary College.
Gerus, George H.....	Columbia “ “
McCorcoran, Alex.....	“ “ “
Hanshaw, Elias, Jr.....	American “ “
Hanshaw, T. J.....	“ “ “
Mustoe, John F.....	Columbia “ “
McLean, Roderick A.....	American “ “
Pendry, W. H.....	“ “ “
Von Lang, Otto A. A.....	N. Y. C. of Vet'y Surgeons.

NON-GRADUATES, BUT MEMBERS OF VETERINARY SOCIETIES.

*Names.**Societies.*

Waters, George W.....	New York County Veterinary Medical Society.
Waters, G.....	“ “ “ “

REGISTERED ONLY BY AFFIDAVITS.

Bowen, West.*	Hodges, G. F.
Bowen, Asa.*	Hudson, James G.
Bush, John.*	Krick, Aug.
Britton, Patrick.*	Newman, Philip.
Bennett, James G.*	Rodenwalt, A. H. F.
Bischof, T., Jr.*	Smith, Ed. S.
Corwin, Grotius S.	Stewart, George F.
Curren, James.	Wendel, George.
Gilbert, H. R.	Zahn, Lorenz C. J. S.
Harris, John.	

* Over three years in practice.

SOCIETY MEETINGS.

SEMI-ANNUAL MEETING OF THE MISSOURI ASSOCIATION.

The semi-annual meeting of the Missouri State Association of Veterinary Science and Comparative Medicine, was held last night at Dr. James', 1029 Lef-fingwell avenue. Those in attendance were Dr. Paul Paquin, of Columbia, Mo., President; Dr. Harry B. Platt, of St. Louis, Secretary; Dr. T. E. White, of Sedalla, Mo., First Vice-President; S. W. Slattery, A. Rouf, C. W. Crowley and H. F. James of St. Louis; Adam Harthill, of Louisville, Ky.; H. B. Adair, of

Kansas City; D. Sutherland, of East Saginaw, Mich.; John R. Hagyard of Lexington, Ky.; M. McNally, of St. Louis, and others. Henry L. D. Breide, V.S., of Cape Girardeau, Mo., was admitted to membership. The resignation of E. St. George Courtney, V.S., was accepted. The Secretary read a paper by T. A. Edwards, M.D., of Marshall, Mo., on "Professional Worth." The doctor made one novel statement in his essay, that Michael Servetus was burned by Calvin because of his teaching the circulation of the blood. Theotarians usually say it was because Servetus was a kind of Unitarian. He went on to say that the physician, even more than the clergyman, must be man of professional worth, a man of real unselfishness. He held that as veterinarians rightly conduct themselves they will earn respect. He was very severe on people who belittle the true veterinary profession. The paper was decidedly witty and sarcastic in parts.

Speaking on the paper, Dr. Paquin told of the chair of comparative pathology at Columbia. He showed the necessity of that study for the ordinary practitioner. Three men had died of glanders during the last year and no physician was able to diagnose their cases. The fact was brought out that the quarantine law was excellent and very strict, if enforced.

Veterinary Surgeon James described a case of pannus in a horse's eye which had come under his observation. He treated it with mucus from a pink-eye patient, then with nitrate of silver, and was thoroughly successful. The disease he had seen very frequently in dogs.

After this the President called attention to the fact that the sanitary law of the State provided only one veterinary surgeon for the whole State, and provided no assistants at any time. Besides, no provision was made for the study of special diseases, such as hog cholera. Dr. Tiffany described the provisions of Illinois law where the practical veterinarians over the State were empowered as assistants to the Live Stock Commission. They were paid per diem only and expenses.

Dr. Paquin was ordered to consult with Mr. Proctor, author of the law, on the subject.

The Doctor gave an account of his visit to Europe, principally to study hog cholera. Dr. Salmon held that the French and American diseases were different. Externally the lesions were the same. Dr. Paquin was almost certain that the same germ caused each disease. Hog cholera was not vaccinated against with success only for certain breeds. They inoculate through rabbits. The operation was a particularly delicate one. The Doctor discussed it and kindred subjects at considerable length.

NEWS AND SUNDRIES.

PROPHYLAXY OF RABIES IN DOGS.—From a series of observations, Mr. Pasteur makes the following conditions in relation to the inoculative prophylaxy in dogs that have been bitten. Vaccination must be begun a short time after inoculation, on the next day if possible, and the operations must follow rapidly; the series of preservative operations must be given in 24 hours and even in less time—and the treatment must be repeated once or twice successively by inoculation of the same two hours apart.—

Revue Scientifique, Nov. 6th.

AMERICAN VETERINARY REVIEW.

EDITED AND PUBLISHED BY
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Honorary Fellow of the Royal College of Veterinary Surgeons (England),

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Prof. R. S. HUIDEKOPER, M.D., V.S., D. J. DIXON, D.V.S., Hoboken,
AND OTHER VETERINARIANS.

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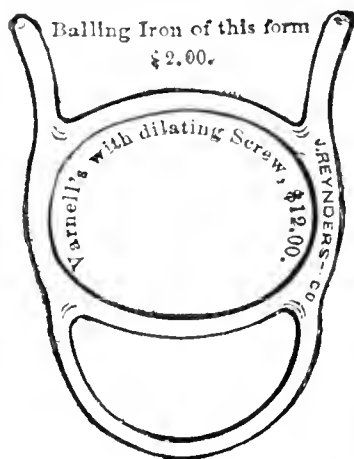
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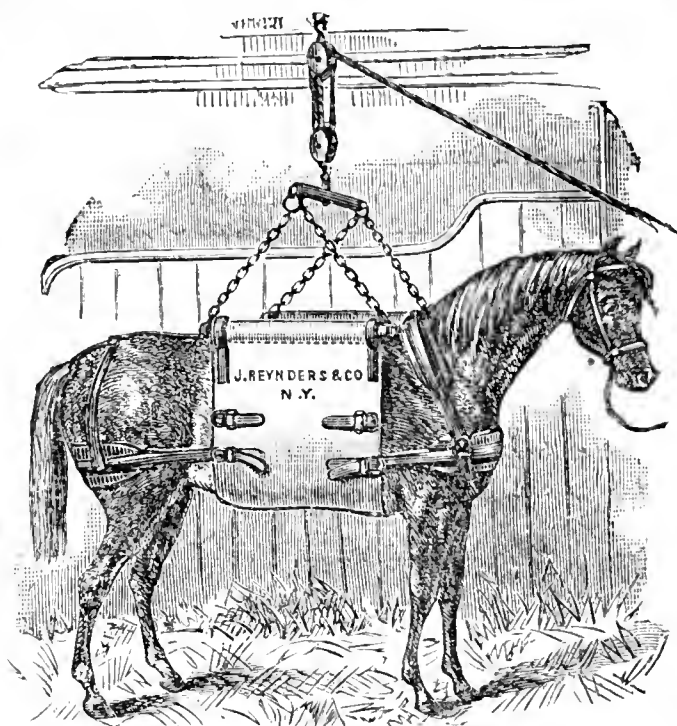
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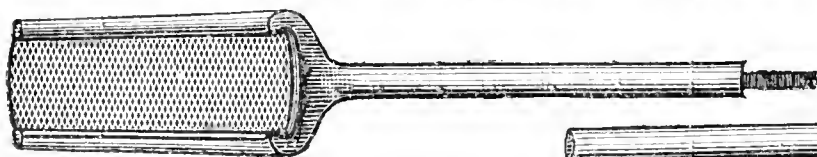
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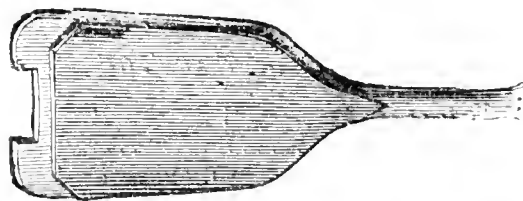
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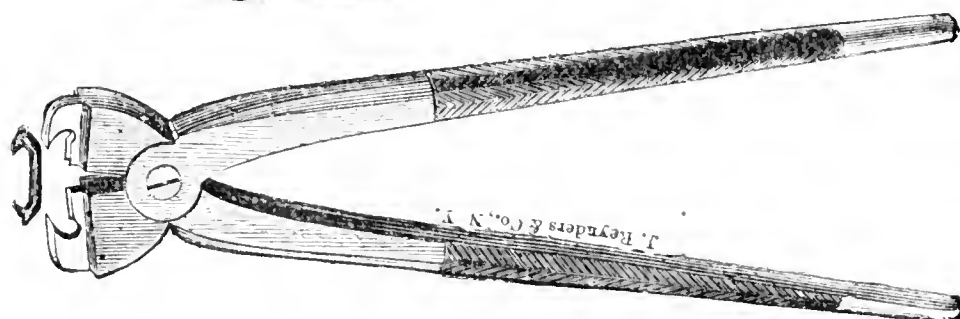
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AMERICAN VETERINARY REVIEW,

FEBRUARY, 1887.

EDITORIAL.

VETERINARY LEGISLATION—the order of the day—it occupies Congress and so the Legislatures of several States—the “Miller Bill” in Congress is for the prevention of contagious diseases in the United States, principally the stamping out of contagious pleuro-pneumonia—it will, however, meet with strong opposition, though it has a fair chance of becoming a law—the attempt to legislate New Jersey—though the New York law is not approved in New Jersey, some good lessons can be learned from it—prospective legislation in Ohio—the faults and deficiencies of the New York act—a disgraceful mutilation after it had passed both Houses and before reaching the Governor—the clause removed must be replaced—otherwise the law is worthless—action of a Judge of the Supreme Court on illegal negotiations render a new bill necessary—objections by veterinarians of the State—organization of the New York Veterinary Protective Association. DANGERS OF HASTY OFFICIAL APPOINTMENTS—lessons derived from this—the passage of sanitary laws has necessitated the demand for State veterinarians—many appointments made want of selections in the appointed—results—incapacity—lack of ability—neglect of duties—who is to blame, the appointing power or the appointed?—duty of veterinary schools to teach sanitary medicine should be added to their curriculum—one of the best means of repairing the harm done will be to prepare for the demand likely to come. VETERINARY TROUBLES IN COLORADO—Dr. A. Martins is appointed State Veterinarian and Professor of Veterinary Medicine to the State Agricultural College—Dr. G. Faville's arbitrary and uncalled for removal—policy the motive—will official appointments in the United States ever be made on the European plan? NOTICE AND THANKS. A NEW MOUTH SPECULUM.

VETERINARY LEGISLATION—THE ORDER OF THE DAY.—The most interesting question of the day in veterinary circles, and amongst persons most concerned in veterinary matters, is that of legislation, and especially, if we are to have any, whether it is to

enure peculiarly to the advantage of veterinarians as servants of the people, or whether it shall be so adjusted as to include in its scope the benefit of the community at large. The making of laws relating in one way or another to veterinary medicine almost seems to have become "the order of the day," not only within the national legislature at Washington, but with the legislatures of the various States, as well. A bill for the prevention of contagious diseases has been introduced in Congress under the name of the "Miller Bill," and, according to general indications, with apparently a fair chance for becoming a law. This measure was introduced and has been manipulated in Congress through the efforts of the stock breeders of the West, and, we believe, originated with the last meeting held in Chicago, by the various kindred associations assembled on that occasion. It is likely, we understand, to encounter strong opposition. But on the other hand, influences not easy to overcome will be brought to bear to insure the success of the measure, and it is not likely that Congress will adjourn without effecting some legislation on the subject, and the appropriation of a fund sufficient to cover the expense attending the process of stamping out. We may, at least, therefore, look for some stringent tentative measure, aiming at the extirpation of contagious pleuro-pneumonia, as the result of the pending legislation, and whatever there may be to follow must be waited for with such patience as we may command. Such of the provisions of the bill as relate to the appointment of veterinarians, as aids in the execution of the law, present strong indications of a large demand for men of recognized ability, and opportunities will probably soon be offered to the practitioners of this class who may entertain a desire to assist in the work.

Special State legislation is not wanting. New Jersey, after her failure last year to perfect an enactment for the protection of veterinary practice, has the matter again under advisement, and strong measures will be urged upon her Legislature. We have printed a transcript of the provisions of the bill, and the result of the pending effort cannot but be earnestly watched by those who, with the veterinarians of New York, are already enjoying legislative protection in their calling. The remark is equally true of

thers who propose to seek the benefits of legal sanction for their chosen profession. Principally amongst these may be mentioned the veterinarians of Ohio and Connecticut, who, we understand, are also preparing to secure the passage of a law regulating veterinary practice in their States.

It is by no means a simple matter to secure even the most obviously proper legislation on the subject of veterinary medicine. The phraseology of the bill; the concessions which may be necessary for the reconciliation of opposing or affiliated interests on all sides; the manipulations of the final passage of the act—all these are little matters of no small practical importance. This is well exemplified by the difficulties that are even now experienced in connection with the existing act passed at the last session of the New York Legislature.

When this act became a law, the veterinarians of that State felt assured that a long step in advance had been gained, and that it had now become but a matter of a few years when the practice of veterinary medicine would be *entirely* and *solely* in the hands of men fully taught and regularly graduated. But a sad disappointment waited upon this enthusiastic anticipation of good things to come. A clause belonging to one of the principal sections had been omitted in the process of engrossing the bill, and probably before it had received the signature of the Governor, and to-day the veterinarians of the Empire State are obliged to seek in a supplementary amending act, with whatever there may be of uncertainty attending its passage, the perfecting of a measure which they confidently trusted was already complete. But not alone was this omission perplexed and troubled them. Another error of a similar character has to be added to the former, and a clause which makes it a misdemeanor, under certain conditions, for persons to engage in veterinary practice who have not been duly registered, is left unsupported by another which should provide for the prosecution of such cases, and another amendatory act must be devised to obviate the difficulty.

This confusing state of things, (which we would be sorry to consider as a fair sample of the proficiency of New York law makers in the details of practical legislation), has been developed

by a peculiar action on the part of one of the judges of the Supreme Court, who, as we stated in our last issue, had issued a mandamus ordering a County Clerk to register a person who, for what reasons? had neglected to comply with the law, and against whom a suit was instituted by the veterinary societies, State and County; but which was dismissed, as having no prosecuting authority. And then a judge under the pretext of *ignorance of a law which he had not read*, allowed an illegal registration to be made. This incident showed not only one danger alone, but also, the one most likely to arise from the mutilation of the act passed in April, unless the necessary correction is carefully made.

One result of this experience has been the organization in New York city of a State Veterinary Protective Association. This organization already numbers some fifty associates, composed of members of the profession in the State, whose object will be to exercise a general supervision of the professional interests of the veterinarians in the State.

Taking advantage of the neglect of a few practitioners to attend to their registration at the proper time, a few politicians have seen fit to introduce a new bill in the present Legislature by which the time for registration is proposed to be extended by an additional six months. The bill, in this meagre form, had nearly become a law, and as narrowly escaped being railroaded through as any bill ever did. It was about to be put on its third reading, and would have passed the Assembly unchallenged had not proper steps been taken to interrupt its progress and secure its reference to the Committee on Public Health, where it will be properly watched and cared for, and the introduction of the amendments to which we have referred secured.

As a matter of common interest to all who have any concern or connection with the procurement of legislative action, whether original or amendatory, relating to veterinary practice in the various States, we have thought proper to recall these matters, and to urge the lessons they are calculated to teach, of the necessity for vigilance and diligence in watching well the politicians and law makers with whom it may be unfortunately necessary at times to come in contact.

DANGERS OF HASTY OFFICIAL APPOINTMENTS—LESSONS DERIVED FROM THEM.—The presence of contagious diseases amongst our domestic animals, and principally, perhaps, that of contagious pleuro-pneumonia, from which our export cattle trade has more or less suffered, has undoubtedly been one of the most obvious means of demonstrating the importance of the veterinary profession to the public as a calling, and necessarily of forcing upon the attention of the public an acknowledgment of the value of the acquirements of the properly equipped veterinarian. The popular need and demand for the services of men competent and tried has of course correspondingly increased. This state of things has naturally given a direction to the thoughts of young men looking for an eligible opening to a professional life, and has perhaps determined the choice of not a few of those whose final election has been the veterinary profession.

Many of the States, having been compelled to confront the duty of providing safeguards for their rapidly increasing stock interests, have also been compelled to look for the men, properly accomplished, to whom to intrust the important duty of detecting and combatting the evils which have become so general and so burdensome. It was not enough to enact good laws and to devise wise sanitary measures for the protection of their live stock; they must also look for veterinarians from whose ranks to appoint the official agents to whom to entrust the responsibility of carrying out the objects of the laws which they have made.

The demand for such professional men became suddenly so great, and the numbers at their disposal comparatively so small, that the proper selection of good men has been at times difficult, and the inevitable result, than which none other could be reasonably anticipated, has since been fully demonstrated. The deficiencies in the acquirements, the experience and the skill of a portion of the official veterinarians in some of the Western States has become to-day a source of trouble and mortification, and their removal for cause seems to be urgently demanded now. The promptness with which their removal should follow the discovery of their incapacity should at least bear some proportion to the haste and inconsideration attending their original appointment.

Unfortunately, however, the accusation of incompetency is not the only objection urged in some of these cases, for we have received information of at least one case in which gross neglect of duty is alleged as the reason for removal from office. This seems to be a case in which everybody is to blame, including the officials who originally granted the appointment to the incompetent veterinarian; but the incompetent himself, who could not be ignorant of his own unfitness, and who, if he could not bring himself to the manliness of declining the office, might at least, after his acceptance of the position, have taken some pains to improve his knowledge and his practical adaptation to the place, which he does not seem to have done.

Such a state of things seems to indicate that of all who were on the ground not one among them had any realizing sense of the importance of the requirements which qualify a man for the office of State Veterinarian. It is not only a simple college education, and a degree obtained from it, that equips a man for such a trust. There are special accomplishments and requisites that one *must* possess. He must be a good diagnostician of the various forms which are assumed by some of the contagious diseases. He must understand that symptoms, causes, lesions, and principally the prophylactic treatment of sanitary science, is a branch of knowledge too profound and comprehensive to be well appreciated and mastered by a mere novice, such as a young graduate. But aside from this, there is a duty which imposes itself upon veterinary teachers. It is just this branch of sanitary veterinary medicine which is almost entirely ignored in our veterinary colleges, and entirely overlooked in most of them, while, probably, it forms in others but a small portion of the curriculum. This is a great error, and a great wrong to their graduates, and it is high time for them to try to repair the harm they have done, and to avoid it in the future.

VETERINARY TROUBLES IN COLORADO—REMOVAL OF DR. FAVILLE—APPOINTMENT OF DR. A. MARTINS.—One of our Western exchanges informs us of the appointment of Dr. A. Martins as State Veterinarian of Colorado, and we are informed that the appointment implies the nomination of the recipient to

the Professorship of Veterinary Science in the State Agricultural College. Our friend will thus undoubtedly find his hands full. We tender our most sincere congratulations to Prof. Martins, whom we have known for many years. He was graduated amongst the first of his class, and since that time has no doubt improved all his opportunities to become thoroughly fitted for the position he now occupies.

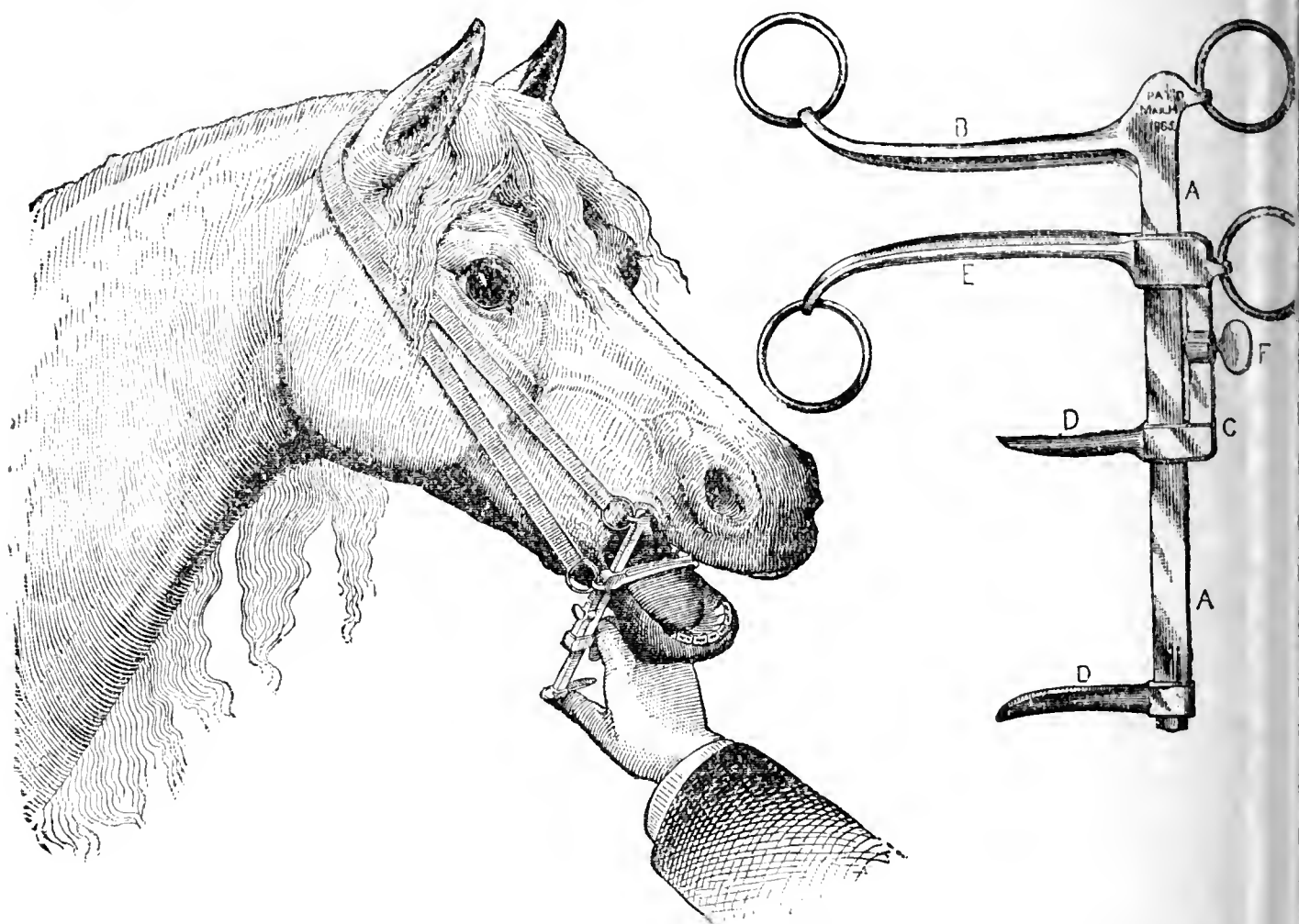
We greatly regret the fact, however, that his election results from what seems to be the improper and uncalled-for removal of the preceding incumbent, Dr. Faville. If we are to believe the information that we have received, the removal of Dr. Faville was "in manner and form an outrage. He was, without notice, oral or written, without cause, or charge being preferred, ousted from his office by a single resolution declaring his office vacant."

The people of Colorado will no doubt congratulate themselves on the selection of Prof. Martins, but an enormous responsibility rests upon him to prevent their regretting the unjust removal of Dr. Faville. But after all, these are but the natural incidents of political appointments. Will the day ever come when all official appointments will be held here, as in Europe, by life tenure, not to be forfeited except for good and serious reasons?

NOTICE.—We have received a large amount of correspondence and several papers for publication. The crowded condition of our pages does not allow us to print them in the present issue, and their publication has to be unavoidably postponed to other numbers. We render this as an acknowledgment to our friends and correspondents.

A NEW MOUTH SPECULUM.—Our attention has been called to an invention by Mr. J. A. Green, of Waltham, Mass., of a new mouth speculum, and to which we have given a careful and critical trial. We have found it very advantageous and of easy handling in practice. A glance at the wood cuts will readily explain its application and use. The only objection which we may find to it, is that the screw F, which is to keep the speculum open, is rather

weak, and as upon its strength stands the safety of the instrument, we believe it might be altered with advantage.



ORIGINAL ARTICLES.

RABIES VERSUS COMMON SENSE.

By G. ARCHIE STOCKWELL, M.D., F.Z.S.

(Continued from page 419.)

The prominent and definite symptoms laid down now, as two thousand years ago, indicative of *rabies* in the dog are; "Reddened eye, a drooping tail, foaming mouth, and projecting tongue." None are of the slightest value! The first is found in all febrile conditions: the second when the animal is weary, ill, in pain, ashamed, or frightened: the third is ever present in the harmless disease, epilepsy, to which dogs are especially subject, rarely so in *rabies* and *never* until paralysis has set in! The same objections are equally applicable to the last. Moreover, rabid dogs do not fear water, do not shun it, but on the contrary *court it*!

All the numberless symptoms ascribed to *rabies* in the canine are developed with equal certainty from a multitude of harmless maladies; from *intestinal parasites*, from which no dog is ever wholly free and which lead to the devouring of all sorts of strange substances! From foreign bodies in the *primæ*, and no canine stomach is exempt from extraneous articles, such as hay, straw, bits of leather, spools, coals, ashes, strings, marbles, etc., a fact generally overlooked by physicians and veterinarians, especially the latter, whose ablest researches and endeavours are for the most part restricted to horses and cattle, for reasons obvious; from *enteritis*, *gastritis*, *acute gastro-enteritis*, *ileus*, intestinal obstructions and perforation, rheumatism, *peritonitis*, *nephritis*, *cellulitis*, *cystitis*, foreign bodies in throat, *larynx*, eye, ear; from "toothache," "earache," parasites of liver, kidney, heart and nasal passages; distemper, ague, *bronchitis*, *pneumonia*, *pleuro-pneumonia*, *laryngitis*, *chorea* (St. Vitus dance) epilepsy, paralysis, seasickness; *anæmia*, *uræmia* (starving, feeding with substances devoid of salt), *mange* (a term that embraces numberless diseases of the skin, though properly belonging to a single parasitical form), *pharyngitis*, constrictions of pharynx, convulsions from whatever cause, abscess in throat, blood poisoning (*pyæmia* and *septicæmia*), *hydrocephalus*, *meningitis*, *encephalitis*, and in fact the whole class of nervous and mental diseases, to which canines are subject *in even greater degree than man*, and whose existence, until recently, has been overlooked, not even suspected by most observers!

Post mortem appearances of themselves also, are especially worthless; and congestion of mucous membranes, of kidney, of spleen; the cyanotic condition of various organs; and the dark, grumous tar-like condition of blood, etc., etc.; are alike fallacious and unavailable as evidence, all being a common sequel to overheating or violent exercises in any form, to surfeit and other simple maladies.

The proportion of dogs bitten by satisfactorily known rabid animals—much less human beings—is extremely small—*less than six per cent*—affording a margin suggestive enough to calm all fears not founded on absolute certainty. Nine different attempts

to inoculate the poodle of Hertwig by rabic dogs were ineffectual; in the veterinary school at Lyons dogs, that were bitten experimentally from three to sixteen times remained unaffected; and experiments innumerable might be cited where dogs were bitten from *one to sixty times* without evil results. Grove admits that but *one out of twenty* dogs bitten becomes rabid: John Hunter, *one in twenty-one*: Hamilton, *one in twenty-five*; and Faber's results gave a total of *thirty-one* (31) out of *eight hundred and ninety-two* (892)! Statistics giving larger percentages are found to be made up chiefly of spurious rabies, or otherwise open to suspicion and criticism.

All punctured wounds, and indeed all cicatrices no matter how firm or aged, have a tendency to inflame and reopen under the influence of septic poisons, particularly as the blood becomes more and more impoverished and the continuity or integrity of the red corpuscles is threatened. I have known this to occur as a sequel to serpent poisoning, poisoning by the finrays of certain fishes, from "nursing sore-mouth, (*stomatitis materni*), and *anæmia*, especially in its pernicious form; and in one instance some twenty or more cicatrices of thirty years standing reopened under the influences of the parasites known as *pediculi corporis*, with which the individual fairly swarmed!

Rabic poison is popularly held to lie dormant in the vicinity of the wound, awaiting only a favorable moment to assert its power, which may occur at periods varying from five days to as many years or more. This is simply *nonsense*, and is but a superstition handed down from remote antiquity. It is not only contrary to all physiological reasoning, but untrue of any substance, toxic, septic, or otherwise. Such presupposes a mysterious influence whereby stasis of capillary circulation is induced without morbid manifestation in the part; and this it is hardly necessary to remark involves a pathological *impossibility*! A certain period is essential to the absorption of any poison, varying with the substance or material itself, its mode of employment, and the characteristics, idiosyncrasies, health, etc., of the individual. If the customary manifestations are not exhibited in a reasonable space of time, say six weeks, (a most unconscribable limit), the per-

on inoculated may disabuse himself or herself of all danger; and should inflammation of the wound supervene, with red lines shooting through the parts, indicative of inflamed absorbents along with swollen glands, it must be ascribed to causes other and remote from rabies! The law of *coincidences* is far more frequent in application than commonly supposed or understood!

Fifty distinct diseases of the human race are and may be mistaken for rabies, including chronic alcoholism, the cocaine, chloroform, ether, and opium habits, and the results that follow in their train. This is not due so much to lack of medical education as to the fears of the individual, and of his advisors, medical and otherwise; and the fact that the malady is of such infrequent occurrence that less than *one-fiftieth of one per cent.* of the medical profession are at all familiar with it or its manifestations; it demands such special study and research as not one in fifty thousand can give, and the teachings of medical schools are usually the blind leading the blind." I might add with propriety that those most familiar with *rabies* hesitate to impart anything regarding it, recognizing their own inability, and for other obvious reasons, referring by preference to some author upon the subject, while withholding their own convictions. I may further add, that with nearly a quarter of a century's experience as physician, dog-owner and breeder, naturalist and student of canine maladies, I have yet to encounter a case of *true rabies* in either the canine or human subject. Of some scores of suppositiously rabid dogs brought me, or personally investigated, both before and after death, all were found suffering, or to have suffered, from other maladies, and by far the greater portion were epileptics. Of two cases in the human subject that seemed not to admit of shadow of doubt; one died, when an autopsy revealed the trouble in an abscess of the middle lobe of the cerebrum that during life had manifested none of the evidences whereby localization is had; the other recovered spontaneously, thereby giving the lie to the diagnosis of some thirty able physicians.

Of the influences inducing *false rabies* and the dangers thereof. I will cite three cases, also from personal observation and knowledge: 1. A man of 45 who had all the manifestations of

true *rabies*, apparently, recovered quickly when it was discovered that the creature inflicting the wound was yet alive, and moreover, in full tide of health. Had the dog-owner destroyed his pet in fulfillment of his agreement with the person bitten, the sequel would have been less pleasant. 2. Miss Z., a lady of New Orleans, was bitten by a pet terrier whereby was produced an ugly and cruel wound involving both sides of the thumb and a part of the base of its nail. The arm swelled, the glands and absorbents became violently inflamed, the wounded member was so exceedingly sensitive and painful as to produce an insomnia that defied opiates and sedatives enormously exhibited, and the nervous condition of the lady was most deplorable. Neighbors, friends, and physicians, who were summoned, united in a verdict of "hydrophobia" and demand for the death of the canine. Happily, the father of the lady, himself a physician (retired), declined to sacrifice his daughter's pet until assured beyond doubt that it was rabid. Miss Z. lingered long in the trembling balance between life and death, but eventually recovered; and the dog waxed old and after many years departed life through senility. In these two cases were involved the expressed opinion of the ablest professional talent of Michigan and Louisiana, and they exhibit in no slight degree the liability to error that exists among the most skilled. Indeed, one can but deprecate the carelessness that ever permits a definite affirmative decision where a diagnosis of *rabies* is involved. 3. Sunday, June 20th, of the current year, I was summoned to a case of supposed *rabies* induced by the bite of a pet fox, the sufferer (a Romanist), believing himself doomed, being already engaged in final religious duties. Inquiry precluded the supposition of *rabies* in the animal, which had been too closely confined for infection, which was affirmed by the resurrection of its body. It is needless to remark, perhaps, that the patient immediately rid himself of his *hydrophobia* and other prevalent symptoms, and dismissed his "soul's adviser." *Verbum sat sapientis!* In conclusion are offered a few simple axioms for consideration and remembrance:

1. Dogs that are rabid never evince fear of water.
2. Excessive *slaver* is produced by inability to swallow, and by

alysis, independent of rabic conditions, and is a sequel to numerous local, brain and nerve maladies, especially hemiplegia, toothache," and "St. Vitus' Dance;" moreover, twitchings of yes, eyelids, facial muscles, and a lolling tongue and trembling jaw, may be placed in the same category.

3. *Rabies* is never of spontaneous origin !

4. Wounds from the teeth of other than the *carnivora* are never rabic, *but may induce septic poisoning* ! It is a well known physiological fact that excessive anger or fear may so transform any of the secretions, even mother's milk, as to induce fatality.

5. Safety lies *not* in destroying but in *preserving* the life of the suspected canine, isolating it for observation ; its death removes the only means whereby a definite conclusion can be reached ! If possible the animal should be muzzled and its body examined for recent wounds ; if they are absent, it is presumptive evidence the creature is not rabic. If it evinces good appetite and especially if it partakes readily of food and drink on and after the fourth day, it is not rabic. If it dies without paralysis of lower jaw and posterior extremities, it is not rabic. If after ten days, it be of cheerful disposition, it is not rabic. If it falls into convulsions and foams and froths at the lips, the saliva perhaps streaked with blood-stained mucous, it is *epileptic* and a subject for pity and commiseration. *Dogs with "fits" are never rabic* ! If it survives a fortnight, it is not rabic. Finally, if death ensues, a careful examination of the body, brain and intestines especially, will probably reveal good cause therefore, aside from a rabic condition !

6. The human subject affected by *rabies* does not howl or bark after the manner of canines, and such manifestations are *prima facie* evidence of the non-rabic character of the malady—most probably hysteria.

7. Hydrophobia (fear of water) *aerophobia* (fear of air), and intolerance of bright substances and sunlight in man are common results of many maladies, such as nervous hyperaesthesia, hysteria, spasmodic and membranous croup, acute laryngitis, and pharyngitis, certain vegetable and mineral poisons, melancholia, dementia, hypochondria, the use and abuse of sedatives, narcotics and stimu-

lants, diseases of the female sex, excessive pain as from obscure and undetected cancerous affections, etc., etc., and is a frequent concomitant of a disease of the eye-ball known as acute glaucoma; these symptoms would never excite especial and remarkable attention or suspicion were they not in some way aroused coupled with the dog as a factor.

9. The multitude of nerve and brain disorders, many of which are little understood, in their varied manifestations are often mistaken both in man and beast for rabies.

10. There are no positive means of deciding a disease to be *rabies*. Until death ensues the weight of evidence is ever in the negative, and even then is by no means certain!

RABIES IN CATTLE.

BY FRANK S. BILLINGS, V.M.

Director of the Experiment Section and Laboratory of the University of Nebraska.

(Continued from page 464.)

The animal was a red steer, about two years old, in tolerably fair condition. The first thing noticed, as we approached it from a distance, was its almost continuous bellowing, which increased if any one approached closely to the pen. The right eye was completely blind and amaurotic; the pupil of the left not so much distended. It could not swallow either feed or water. When excited to move, it tumbled over on fore-knees, even falling to the ground, but rapidly got up again. It had endeavored to chase several strangers who were in the field at the time it was caught. This was the fifth day of its illness, so far as known, but it was ill when found, very excited, and charging repeatedly upon the other cattle in the field.

The average period of the illness in those that have been watched and not killed, has been about nine days.

AUTOPSY.—Animal shot through the heart. Blood blackish-blue as it flowed from the cut vessels; rapidly coagulated on contact with the air, and soon reddened. No exudation in abdominal cavity; bladder empty. The intestines, especially the smaller were of diffuse pink-red color; mesenteric vessels dis-

ended with a pink-red fluid, as well as those of the omentum; the mesenterial lymph glands were swollen, the cut surface being of a diffuse red color, glistening and juicy. The spleen was somewhat enlarged, but not degenerated in any way, nor did it contain an abnormal quantity of blood.

As the disease had been pronounced anthrax by a person of some authority, and as I had provided myself with a suitable field microscope, an examination of the blood for the bacilli of that disease was at once made. Result: Negative!

The liver and kidneys were somewhat swollen with blood, but were otherwise normal so far as a microscopical examination could determine.

Oral Cavity: The fauces were anæmic, and not at all swollen, but the clinical phenomena indicated the existence of a paralytic condition. The œsophagus presented a most remarkable appearance, being distended to the size of a bologna sausage by partly masticated food, which extended from a point corresponding to the curve of the posterior aorta to its pharyngeal ostium. On opening the same it was found filled with corn and fodder, and at the inferior point of the obstructing mass was a large bolus of corn fodder, but not so large that it could not have passed on to the rumen had there not been paralysis of the muscorlis. Lungs normal; heart normal. The rumen and reticulum were well filled with ingesta in a somewhat dry condition. The omasum was the hardest I ever saw, both to the touch and in resistance to the knife, the interlabial spaces being completely packed with ingesta of a hard and dry consistency. No signs of intestinal irritation were to be seen in the linings of the three anterior stomachs.

The Abmosum: Empty. Mucosa intensely of a diffuse pinkish color, and somewhat swollen, but not covered with any catarrhal effusion, nor were any hæmorrhagic discolorations present.

The mucosa of the small intestine was in the same condition, while that of the large was less swollen and infected. The contents of the small intestine was semi-fluid, becoming thicker and drier in the large until we approached the rectum.

On opening the cranium, there was found to be a considerable

quantity of reddish aqueous fluid between the pachia and leftomenix. The vessels of the latter were distended with blood, as were also the large sinuses. The brain substance was reddened and glistening, and somewhat œdematous; numerous petechial spots, of a red color, were distributed through its substance. Blood oozed freely from the cut vessels. Each of the lateral ventricles contained over a tablespoonful of a red aqueous fluid. The vessels of the choroid plexus were distended with blood.

Medulla oblongata marked by numerous petechial spots and of a glistening and œdematous appearance.

(Nov. 8.—Took train early this morning, accompanied by Drs. Thomas and Bowhill, anticipating that Mr. Vance's steer would be much worse. Found my anticipations correct, as Mr. Vance had just harnessed his horse to go to town and telegraph me. He reported that the steer had become much worse and very wild and ferocious at times since we were there on the 5th, and that he did not think it would live much longer. It had eaten or drank nothing since.

Condition seen to-day : Marked signs of emaciation since we last saw it. Eyes bloodshot and wild-looking; veins of retina (?) much injected; very excited upon the least movement on our part, and bellowed every other moment; stamped with fore feet and tore furiously around the pen. On a small water-trough being put into the pen, it went for it with intense fury, so that we felt obliged to put poles into the pen and force the animal into one corner, when it was removed with some difficulty. We had fears that it would break through the pen, it was so violent. Urination frequent.

Shot through the heart by Dr. Thomas. While standing and bleeding, it passed about a pint of a thick manure, which it immediately turned round to eat; soon dropped in its tracks.

AUTOPSY—Made by Drs. Bowhill and Thomas, as I had a wounded finger :

Brain : On removing the cranium, the large sinuses were found filled with a dark blue-red colored fluid, semi-coagulated. The vessels of the pia mater were very much distended by the same kind of a fluid, and extended above its surface. The gray

substance of the brain had an abnormally red shade; cut surface moist and glistening; a dark red fluid oozed from the cut vessels. At the base of the brain was a considerable quantity of straw-colored fluid. The ventricles contained a quantity of red aqueous fluid; choroid plexus distended with blood.

The medulla oblongata was surrounded by an abnormal quantity of straw-colored fluid; cut surface moist and glistening; longitudinal veins of spinal canal filled with a dark blue-red fluid. Fauces somewhat swollen and covered with a viscid material, and the large vessels injected. The entrance to the larynx somewhat red and swollen; vessels injected. Some of trachea and bronchial tubes, bronchial lymph glands swollen and somewhat reddened; cut surface moist and glistening. Lungs and heart normal.

Abdominal cavity: Blood dark blue-red; vessels of omentum and mesentery engorged; some diffuse redness here and there in both membranes. Outside of small intestine of a diffuse delicate pink-red color; that of large less so. Spleen somewhat enlarged and of an oblong-oval shape; the swelling was more in thickness than in length.

Liver swollen, and the substance of an opaque yellowish-grey appearance. Gall bladder full.

Kidneys somewhat swollen. Cortical substance of a yellowish-grey opaque color; medullary red, and vasa recti injected.

Bladder about one-third full; urine of a pale straw color; albumen present in small quantity.

Stomach: Only partially filled with ingesta. Linings of first three stomachs softened, and peeled off easily. Third stomach contracted, and contained numbers of small stones. Mr. Vance remarked that "all his sick cattle eat dirt greedily."

Fourth stomach: Mucosa swollen, of a diffuse pink-red color; numerous ecchymoses of variable dimensions, with here and there somewhat extensive hæmorrhages which ended diffusely in surrounding tissue. This condition extended through the small and into the large intestine, becoming less and less marked towards the rectum. The intestines were but partially filled with chyme and fæces, and the walls contracted; it was

semi-fluid in the small, and became thicker and thicker towards the rectum. The large vessels were much injected. Mesenterial lymph glands swollen, moist, and of a diffuse pink redness.

I endeavored to inoculate a number of herds from the substance of the brain and medulla oblongata, but as it had to be done in the field and as there was a strong wind blowing, I did not meet with results worthy of reporting at this time, although one form of bacterial life was found to predominate in the cultures.

Subcutaneous inoculations of dogs with large quantities of a bouillon culture of this organism did not produce rabies, but did produce a very singular form of general paralysis, which I am not satisfied to call dumb-rabies, as there was no dropping of the lower jaw, or any such appearance of the pharynx and larynx as are seen in rabies.

I do not consider the above experiments to have any value, as they are too full of objections, but if rabies was present in these cattle, as I am led to conclude, from the history and clinical symptoms, I cannot but think that if the micro-organism is successfully isolated, that large quantities of a bouillon culture introduced subcutaneously, should produce a furious form of rabies in one of three dogs, when the small quantity of virus introduced by a bite is known to do it under natural conditions. I consider that all intra-cranial or meningeal inoculations are open to serious objections, and that to produce rabies in experimental dogs, so that the proof shall be beyond question, we must introduce the cultivated organism in exactly the same manner as is done under natural conditions, and that if we have discovered the organisms, large quantities thus introduced should more surely produce rabies than the small quantities under natural conditions.

But this is not all; if the dogs, thus inoculated, really become rabid to all appearances, we cannot say that we have induced the genuine disease until healthy dogs have been exposed to such dogs and bitten by them, and then, that rabies has developed in some of them in course of time. The above microscopical description exactly corresponds to that of the second animal killed by me on the 28th of August, with the exception of the peculiar

conditions in the oesophagus, which were wanting. Among other clinical symptoms not noted above, the owners report that when milk cows were affected the yield of milk soon ceased until finally there was none. Many of the animals masticated a great deal and much saliva flowed from their mouths. Tenismus was frequent. They pawed a great deal with their fore feet.

It may not be uninteresting to record some of the views of authors upon rabies in cattle.

Spinola says—'Handbuch der spec. Palagia and Thereapie. 1858, p. 1555.

"Cattle, bitten by rabid dogs, are more frequently subject to the disease than horses; the phenomena observed are dependant upon the same organic disturbances as in other animals, though the symptoms vary somewhat in different cases.

"The disease begins with loss of appetite, depression and irritability on being suddenly disturbed; the eyes are fixed, wide open, and pupils more or less distended; saliva and froth falls from the mouth; they sometimes gnaw the place of the bite and lick other parts of the body (not reported to or seen by me in the Nebraska cases); they bellow frequently, the voice having a peculiar horse tone; they stamp much with the fore feet and easily become excited at the presence of dogs, other animals or strangers; a tendency to bite is seldom observed. They endeavor to pass the feces frequently but without much success; in the beginning it is hard, but later on may become fluid, but in either case only small quantities are passed at a time. An undue sexual excitement is often present in both cases.

"Sometimes all these phenomena are present in a single case, in others not. Paroxysms of fury, varying in intensity, are frequent; after which the animals become weak and quiet again. They soon begin to emaciate; paralytic phenomena are frequent."

Williams gives similar symptoms, quoting from Fleming.

Roll says:

"The phenomena in cattle are essentially the same as those seen in the horse. Depression, great irritability, muscular spasms, foaming at the mouth, sexual excitement, difficulty in swallowing and irritation at the locus traumaticus."

During the paroxysms the eyes become reddened, distended, fixed, and the pupils dilated; the voice is changed to a hoarse, dull sound; the animals bellow frequently; stamp with the feet; often fall to the ground but soon rise again, or they seek to become free from their chains when fastened in stables; they strike with the horns and often attack other animals. Appetite and rumination soon cease entirely; the excrements are at first passed in but small quantities and but little at a time and with much tenuus; later on they become fluid, the other conditions continuing; they frequently become much emaciated; at last they become paralyzed, especially behind, and fall into a soporous condition.

Other authors give similar testimony.

EXPERIMENTAL PREVENTION OF RABIES BY INOCULATION.

BY DR. S. WOLFFBERG.

(“Centralblatt für Allgemeine Gesundheitspflege, vol. v., p. 274.”)

According to the statistics which have been given, it cannot be denied that the results obtained by M. Pasteur, even though his experiments are not without some serious objections, speak most emphatically for the possibility of his preventive treatment for rabies. A very essential objection to the experiments of Pasteur is the want of any satisfactory examination of the organs of rabid animals for specific bacteria, especially those of the nervous system. The specific etiologic principle of rabies is thus far unknown; hence we can still hold doubts if all the cases with which M. Pasteur has experimented have been genuine rabies. Pasteur has, however, shown that dogs, which have been inoculated according to his preventive method, have successfully resisted the effects of the bites of other dogs which were known to be rabid; while still other dogs which had been subjected to this treatment have become unquestionably rabid in consequence of similar insults.

These experiments should satisfactorily demonstrate that M. Pasteur has worked with genuine rabies' material; *i. e.*, with tissues which contained the virus of that disease.

Rabies, therefore, should be classed with those diseases in which, in certain species of animals, a more or less complete non-receptivity is produced against a section of infection of the same disease. It especially belongs to that class of diseases against which a form of immunity can be produced by means of artificial inoculation through a mitigated infecting material; *i. e.*, weakened preparation of the specific virus.

In all previously known cases of artificially produced immunity, the artificial infection, by which a severe natural infection has been prevented, has had to be produced anticipatory to exposure to the latter. We inoculate with a weakened virus in order to protect humanity from the small-pox. The same is true with regard to the protection of susceptible animals against anthrax.

Pasteur has apparently made a most important advance in this direction, in that he seeks to prevent the eruption of a deadly disease (rabies) after the animal organism has already been exposed to natural infection, by the introduction into the organism of a mitigated artificial preparation of materials prepared from organs containing the natural virus. Pasteur's preventive attempts upon human beings have, however, an entirely different complexion than those which he has reported upon dogs, above alluded to. In the preventive-inoculated dogs, they were subjected to his treatment before being exposed to the bite of rabid ones, while with human beings he seeks to prevent the generalization or eruption of a disease, the infecting principle of which has already been introduced previous to his treatment. This assertion, or rather attempt, of Pasteur's does not correspond to our experience with regard to vaccination; that is, vaccination has not been shown to be able to prevent the eruption of small-pox in an already infected organism; hence it is scarcely reasonable to assume that such a possibility exists for persons bitten by a rabid dog without further experimental proof. In this case we have to face the results of the "new assertions."

Prof. v. Frisch has asserted "*that Pasteur has received positive results in some twenty days after they had been bitten by rabid ones, by means of his preventive inoculation.*"

It is very unfortunate that we have not been favored with the

exact details of the above experiments. So far as we in Germany are concerned, our knowledge of these is based only upon the above communication.

We are therefore justified in looking upon them not only with some degree of wonder, but doubt also.

V. Frisch has the honor of having repeated some of M. Pasteur's experiments which bear upon the above assertion, and has come to the result "*that neither rabbits nor dogs can secure immunity against the outbreak of rabies by the employment of M. Pasteur's preventive treatment, when infection has already taken place through the intra-cranial introduction of rabid material.*"

It must be admitted, however, that these experiments do not satisfactorily nullify the assertions of M. Pasteur.

If we consider the conditions by which protective inoculation with a mitigated virus is to prevent the outbreak of rabies after an animal (man) has already been bitten by a rabid dog, we must, *a priori*, assume that the changes produced by the inoculation have either run their course or attained a high degree of development before the virus introduced by the bite has developed any considerable degree of activity: Hence, *the protecting disease must have an essentially shorter course than the natural rabies.*

So far as rabies in man is concerned, it is assumed that forty to sixty days must generally elapse, from the time the person was bitten by a rabid dog, before the phenomena of the disease appear. During this so-called period of incubation of forty to sixty days, it cannot be assumed that the infecting elements lie entirely dormant; they undoubtedly increase and disperse themselves, so that, from the period of infection to the outbreak of the disease, their generalization over the organism must gradually take place.

It is, therefore, of the utmost importance, for the successful action of the inoculation which follows the biting of an individual, to determine the length of time subsequent to the same in which the same can be resorted to; that is, the difference in the period of incubation (better generalization—B.) between the artificial and natural disease.

Herein is to be sought the vital point in the experiments and new discoveries of M. Pasteur for the prevention of rabies.

If, for example, one infect dogs with a rabid virus which has virulency enough to cause the disease to come to its full development, and to kill the patient in the course of twelve days, we should not be justified in expecting preventive results from the subsequent inoculation of a material which could only cause stronger organic changes in a very little shorter period in the inoculated individual. It is known that Pasteur has succeeded in producing an inoculative material by carrying rabid material from dogs originally) successively through rabbits, which eventually does not require more than seven days to produce lyssa in an inoculated individual. Should we inoculate a dog with such material, after it had already been inoculated with a material that required twelve days to produce rabies, we have to fear that such severe disturbances will have already taken place as to render the resort to preventive inoculation too late. We cannot expect that the inoculation (after the bite of a rabid dog) eliminates the pathological changes; we intend that it shall produce much. Preventive inoculation, after the biting of an individual by a rabid dog, is only to be assumed as possible of success when the natural inoculation has a relatively protracted period of incubation, in which the action of the specific elements is of minimum intensity, so that the subsequent protective inoculation is enabled to produce more rapid and marked changes, on account of the greater activity (rapidity) of the specific principle in the artificial material; or, in other words, *so that, through the subsequent (to the bite) inoculation, produces preventive effects.*

Dogs which have been bitten by rabid dogs do not themselves become rabid, generally, before from three to five weeks. Dogs which have been inoculated subcutaneously with the unweakened natural virus require even longer than those which have been inoculated in the brain. Such cases, which have a longer period of incubation, correspond more to rabies in human beings; and it is only such cases, with an extended period of incubation, that are suited to prove the question if the inoculation with infectious rabies material which has been derived from rabbits is capable of preventing the outbreak of the disease.

Although the evidence is fully as much for as against M. Pas-

teur's assertion, *still the best means to prevent rabies—human or canine—is to reduce the number of dogs to the smallest number possible by means of a rigid tax and strict execution of the law, and by compelling every dog to wear a muzzle at all seasons of the year.*

PATHOLOGICAL PHYSIOLOGY.

ON THE RESISTANCE OF THE VIRUS OF GLANDERS TO THE DESTRUCTIVE ACTION OF ATMOSPHERIC AGENTS AND OF HEAT.

BY MESSRS. CADEAC AND MALET.

We have tried first to realize the natural conditions which, in practice, destroy glandered virus or preserve its conditions, and we have thus examined how long the virulency lasts: first, in matters more or less rapidly dried and in the lung exposed to the air at various times of the year; second, in matters placed in an atmosphere saturated with humidity at the temperature of the air surrounding; third, in matters mixed with water. Then we have studied the resistance of the virus to heat.

We have thus observed that: first, it loses its virulency in matters exposed to free air after complete desiccation; second, that it is rapidly destroyed by warm weather, and, on the contrary, slowly by cold and damp; third, that the virus rapidly dried preserves its virulency longer than when dried slowly; fourth, that glandered matters placed in a medium saturated with humidity at the surrounding temperature preserve their activity for a long time; fifth, that the discharge of glanders placed in watering places may preserve its activity for eighteen days; sixth, that the simple throwing of boiling water upon glandered discharge does not destroy its virulency, and that this is destroyed when the discharge is dipped for two minutes only in water in ebullition, though it is not necessary to expose it to such elevated temperature to destroy it.—*Semaine Medicale.*

INFLUENCE OF THE ORGANISM OF GUINEA-PIG UPON THE VIRULENCY OF TUBERCULOSIS AND SCROFULA.

BY M. S. ARLOING.

We have demonstrated that pulmonary tuberculosis affects guinea-pigs and rabbits, while true gangliomar scrofula produces no lesion in the last named animal. From this fact we did not dare conclude that both processes were specifically different, but were obliged to admit that if they derived from one agent, its activity seemed considerably attenuated in scrofula. Starting from this, it was interesting to find out if the virulency of scrofula could be sufficiently increased to render it able to infect either one of those animals.

The organism of guinea-pig is extremely favorable to both tuberculosis and scrofula. This last develops itself so easily and assumes such degree of malignity, that it is justifiable to believe that if it was made to last several generations upon this animal, it would be capable of destroying the resistance presented to it by the rabbit's organization.

Experiments made in that direction have shown that the passage of scrofula on the guinea-pig, during two successive generations, does not increase its virulency for the rabbit, and does not modify to any sensible extent that which it possesses for the rabbits.

The result is different with true tuberculosis under its attenuated forms.

Among the bony and articular diseases of men known as local or surgical tuberculosis, some are beyond, while others are considerably improved if not cured, by surgical interference. Those are manifestations of scrofula, others are tubercular, of a less virulent nature than tuberculosis of the lungs or serous membranes. If, then, simultaneously, inoculations are made on rabbits or guinea-pigs with the lesions of this nature, the pigs may present the classical lesions of the most generalized tuberculosis, while the rabbits will escape with a small purulent collection or small granulations of the subcutaneous cellular tissue at the point of inoculation, as if it followed a simple scrofulous inoculation. But again, inoculate rabbits with the tubercles thus developed

in pigs, and those will most always develop a pulmonary tuberculosis. The lesions may be limited ; yet implanted in the organism of the two species of animals thus named, they give rise in both to a manifest tuberculosis. At times, true successive cultures on the guinea-pig are necessary to elevate the virulency to the height of the resistance of the rabbit to tuberculization.

Then the organism of the guinea-pig increases the virulency of weakened tuberculous virus, and seems to have no influence upon the virus of ganglionar scrofula.

This fact is quite important, now that there is a tendency to consider tuberculosis and scrofula as one and the same disease. Once again is shown the difference existing between them. If it is not proved that they are due to different causes, or if it must be admitted that they derive from one agent the tuberculous bacillus in different degrees of activity, at least it is shown that in true ganglionar scrofula this agent is yet further from its primitive virulency than in local tuberculosis. Perhaps it is far enough from it to form a fixed variety analogous to those micro-organisms which, after living several generations in an animal specie, are in future unable, in spite of all known means, to destroy the spores from whence they came and in which they made so many victims.—*Academie des Sciences*.

UPON THE EXHALATION OF CARBONIC ACID IN INFECTIOUS DISEASES DUE TO AEROBIC AND ANAEROBIC MICROBES.

BY M. S. ARLOING.

The connection so justly established lately between pathogenic micro-organisms and ferments has become the starting point of several hypotheses as to the intimate causes of death in virulent affections of rapid evolution.

If the microbe is aerobic, M. Pasteur presents it fighting with the red corpuscles, taking the oxygen from which they are loaded, and thus removing from the tissues the necessary element of combustion. This phenomena is well shown in the case of the bacillus anthracis and of the microbe of chicken cholera. If the microbe is anaerobic and acts as such in the organism that is

producing evident fermentation, the changes are different, as in this case the pathogenic agent is disturbed by the oxygen in the manifestation of its properties.

Admitting for an instant that these characters, observed *in vitro*, take place in living media, important differences must be met, to the point of view of the intensity of respiratory combustion in the two animals, which succumb, one to the inoculation of an ærobie or to the introduction of an anærobie microbe. If these differences do not exist, the influence deriving from gaseous affinities of ærobie bacilli is not primordial in the question present. And then, the study of respiration, during *the entire duration* of some virulent diseases whose germs belong to the two above-mentioned types, offers considerable interest.

The diseases chosen for this study are affections met in human species, viz., malignant pustule and gaseous or foudroyante septicæmia.

The guinea-pig and the white rat are the animals which were used. The greatest part of oxygen consummated and eliminated as carbonic acid was dosed during respiration, before the inoculation and during the disease artificially produced. To do this, the animals were enclosed before and after inoculation in a peculiar apparatus.

From a large number of experiments made the following results were obtained :

First.—In anthrax and gaseous or gangrenous septicæmia the quantity of carbonic acid thrown out by respiration diminishes during the course of the disease, especially towards the last hours.

Second.—This change seems to have shown itself after the first effects of inoculation in anthrax, while that after inoculation of gangrenous septicæmia a *slight* increase in the quantity of exhaled carbonic acid was observed for several hours.—*Académie des Sciences.*

CEREBRO-SPINAL MENINGITIS.—It is stated that Dr. Stalker, State Veterinarian for Iowa, on examination of the herd of cattle in Guthrie County, of which quite a number have died, as announced in our last issue, pronounced the disease to be cerebro-spinal meningitis.—*National Live Stock Journal.*

EXTRACTS FROM FOREIGN JOURNALS.

DIFFICULT LABOR IN A MARE—PROLAPSUS RECTI WITH INVAGINATION—DEATH.

BY M. DURIEUX.

This interesting observation shows the serious character of invagitated displacements of the rectum. On account of an abnormal position of the foetus, a pregnant mare makes such violent struggles that she has prolapsus recti. She is soon relieved of her difficult accouchement, but the rectum remains protruding, forming a large tumor, red, purplish, through which an invagination of the anterior into the posterior parts of the rectum can be readily discovered. The prolapsus is, however, carefully reduced almost easily, still the mare dies the next day. Half an hour before death the prolapsus had returned, more serious and soon followed by its complete circular rupture at about half a yard from the anus. This is followed by a large hernia of the colic mesentery. At the post-mortem extensive hemorrhage into the peritoneum and a complete laceration of the meso-rectum and of the posterior portions of the colic mesentery are found. This was the cause of death. Evidently extensive prolapsus recti generally carry with them laceration of the peritoneal supports of the last portions of the intestines.—*Annales de Bruxelles*.

MELANOSIS IN A CALF.

BY MESSRS. BAILLEUX AND DEGIVE.

Melanosis shows itself under two principal forms, with or without proliferation of histological elements. In the first case it is single melanosis, in the second it is hypertrophic or neoplastic melanosis.

In the single melanosis, the melanic substance is accumulating in a limited region and forms a *collection*, a *melanic cyst*; or it is found diffused and disseminated in the meshes of a tissue and constitutes *melanotic infiltration*.

It is to this kind that this observation belongs. It was observed in a five days old calf. The melanine was infiltrated at

various degrees in the subcutaneous and peri-osseous connective tissue of all the right half of the head, the cerebro-spinal meninges and cranial nerves; connective tissue continue to the globe of the eye, the right pituitary, the mucous membranes of the palate, pharynx and larynx, the pulmonary tissue, liver, heart and right costal pleura. Considering the character and distribution of the lesions, the author is inclined to consider them the result of bloody diffusion which became black by destruction of the red corpuscles and the transformation of hematine in melanine. The cause of these hemorrhages is unknown. The animal was black with few white spots on the back, abdomen and the part of the head where the lesions were the smallest.—*Annales de Bruxelles*.

MAXILLARY FISTULA IN A DOG.

BY MR. X. PANCHENNE.

A pointer slut had on the right facial region a tumor the size of a nut, somewhat soft and painful. Opened, it allowed the escape of a certain quantity of clotted blood, which was squeezed out and the neoplasm was dressed externally with tincture of iodine. After a few weeks, the animal had entirely recovered. Three months after, however, there was a relapse and the growth had reappeared with the same characters. Remembering the mention of similar cases made by Prof. Reul of the Bruxelles school, the author made a careful inspection of the buccal cavity and examined with attention the condition of the molar teeth. Percussing every one with the point of a pair of curved scissors, he observed that the third molar, though, like all the others, presenting a handsome white appearance, gave a peculiar sound, and seemed to be less strongly implanted in its alveolar cavity. This tooth was extracted and found to be slightly decayed under the gums. It was the cause of the trouble, for recovery rapidly followed the operation, and the animal has enjoyed perfect health since.—*Annales de Bruxelles*.

MELANOSIS OF THE KIDNEYS IN A HEIFER.

BY MR. ANDRIEU.

A Normandy heifer, two months old, was found dying without having ever presented signs of disease. At the post mortem, the cause of death was found to be due to well-characterized pulmonary congestion. Besides this, the left kidney is found to be of black color, while the right is of slate shade. The superficial parts of the surrounding fat, the aponeurosis of the great psoas muscles are of a dirty grayish color. The rumen, intestines and peritoneum in contact with these are also colored black. The coloration of these parts extends into the structure of the kidneys and adheres to the hands which manipulates them. The renal capsular present the same alteration. It resembles very much a case of melanosis infiltration, and is rather exceptional in its manifestations.—*Recueil de Med. Vet.*

PSORIASIS OF THE HOCK.—ABSCCESS FOLLOWING.—RECOVERY.

BY MR. BRIGHT.

A horse had at the hock point, in front, a dilatation of the synovial capsule, a blood spavin. A blister was applied to it and followed by its removal. About two weeks later, a wound, solution of continuity across the hock, scratches like, made its appearance in the fold in the hock. Though the animal is kept at moderate work, a large swelling soon shows itself in the entire leg, which is then unable to carry any weight. Intense fever sets in, and a slight fluctuation shows itself at the bend of the hock. A few punctures give escape only to small excesses of blood. The hock is then treated by continued irrigation, and the next day, say the fifth from the appearance of the swelling, two incisions are made on the internal face of the hock, large enough to allow the escape of a dark, wine-colored pus. The irrigation kept up for a few days, was followed by radical cure.

The case shows the danger of allowing an animal to work when suffering from solution of continuity in front of the hock, as well as the advantages derived by hydrotherapeutic treatment.—*Revue Veterinaire.*

SANITARY LEGISLATION.

A BILL TO EXTIRPATE CONTAGIOUS PLEURO-PNEUMONIA, FOOT-AND-MOUTH DISEASE, AND RINDERPEST AMONG CATTLE, AND TO FACILITATE THE EXPORTATION OF CATTLE AND THE PRODUCTS OF LIVE STOCK, AND FOR OTHER PURPOSES.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled :

That for the purpose of better promoting the exportation of cattle and the products of live stock from the United States, and for the purpose of increasing, promoting and facilitating the commerce in cattle and their products among the several States of this Union, and for the purpose of removing the obstructions to such commerce with foreign nations and among the States now occasioned by the existence of contagious, infectious, or communicable diseases among cattle and other live stock, and especially contagious pleuro-pneumonia, the President of the United States is hereby authorized and required, immediately after the passage of this act, to appoint a Board of Cattle Commissioners, consisting of three persons of known executive ability, who shall be charged with the execution of the provisions of this act, and who shall be known and designated as the "United States Cattle Commission," and whose powers and duties shall be those provided for in this act. The President may, when in his judgment the public interests will permit, suspend the functions and pay of said Commissioners, and, when in his judgment the public interest may require, he shall restore such functions and pay, of which suspension and restoration he shall make public proclamation. The salaries of said Commissioners respectively shall be at the rate of five thousand dollars per annum for and during the period of time in which they shall be engaged in the discharge of their duties as such Commissioners. The said Commissioners shall respectively take an oath to faithfully discharge the duties of their office, and shall immediately organize as such Commission by the election of one of their number as president thereof, and proceed forthwith to the discharge of the duties imposed upon them by the provisions of this act.

§ 2. That it shall be the duty of the said Commissioners to cause investigation to be made as to the existence of contagious pleuro-pneumonia, foot-and-mouth disease, and rinderpest; and such Commissioners are hereby authorized to enter, either in person or by their duly authorized and accredited agents, any premises or places, including stock yards, cars, and vessels, within any State of the United States, the District of Columbia, or the Territories of the United States, in or at which they have reason to believe, and do believe, there exist any of such diseases, and to make search, investigation and inquiry in regard to the existence thereof. Upon the discovery of the existence of any of the said diseases, the said Commissioners are hereby authorized to give notice, by publication, of the existence of such disease or diseases, and the locality thereof, in such newspapers as they may select, and to notify, in writing, the officials or agents of any railroad, steamboat, or other transportation company doing business in or through such infected locality, of the existence of such disease or diseases; and are hereby authorized and required to establish and maintain such quarantine of animals, places, premises or localities as they may deem necessary to prevent the spread of any such disease or diseases, and also to cause the appraisal of the animal or animals affected with or that have been exposed to the said diseases, or either of them, in accordance with such rules and regulations as shall be established by them, as hereinafter authorized and provided, and also to cause the same to be destroyed, except as hereinafter provided, and to pay, in case of diseased animals, the owner or owners thereof three-fourths of their value, as determined upon the basis of health before infection, and the full appraised value in case of animals exposed to either of such diseases but not themselves actually diseased, out of any moneys appropriated by Congress for that purpose: *Provided, however,* That they shall not pay more than one hundred and sixty dollars for an animal with pedigree recorded or recordable in the recognized herd-books of the breed to which the animal destroyed may belong, nor more than sixty dollars for an animal not pedigreed: *Provided further,* That in no case shall compensation be allowed for any animal destroyed under

the provisions of this act which may have contracted or been exposed to such disease or diseases in a foreign country or on the high seas ; nor shall compensation be allowed to any owner who, in person or by agent, knowingly and willfully conceals the existence of any such disease or diseases, or the fact of exposure thereto, in animals of which the person making such concealment, by himself or his agent, is in whole or in part the owner.

§ 3. That the said Commissioners are hereby authorized and required to make, record and publish rules and regulations providing for and regulating the agencies, methods and manner of conducting and making the investigations aforesaid regarding the existence of said contagious diseases ; for ascertaining, entering and searching places where such diseased animals are supposed to exist ; for ascertaining what animals are so diseased or have been exposed to such contagious diseases ; for making, reporting and recording descriptions of the said animals so diseased or exposed and destroyed, and for appraising the same, and for making payment therefor ; and to make all other needful rules and regulations which may, in the judgment of the Commissioners, be deemed requisite to the full and due execution of the provisions of this act. All such rules and regulations, before they shall become operative, shall be approved by the President of the United States, and thereafter published in such manner as may be provided for in such regulations ; and after such publication said rules and regulations shall have the force and effect of law, so far as the same are not inconsistent with this act and the other laws of the United States.

§ 4. That any person or persons who shall knowingly and wilfully refuse permission to the said Commissioners, or to either of them, or to any duly authorized and accredited agent of said Commissioners, to make, or who knowingly and wilfully obstructs said Commissioners or agents, or either of them, in making all necessary examinations of and as to animals supposed by said Commissioners or agents to be diseased as aforesaid, or in destroying the same, or who knowingly and wilfully attempts to prevent said Commissioners or agents, or either of them, from entering upon the premises and other places hereinbefore speci-

fied where any of said diseases are by said Commissioners or agents supposed to exist, shall be deemed guilty of a misdemeanor, and, upon conviction thereof, or of either of the acts in this section prohibited, shall be punished by fine not exceeding five hundred dollars, or by imprisonment not exceeding one hundred days, or by both fine and imprisonment, at the discretion of the court.

§ 5. That any person who is the owner of or who is possessed of any interest in any animals affected with any of the diseases named in section two of this act, or any person who, as agent, common carrier, consignee, or otherwise, is charged with any duty in regard to any animal so diseased or exposed to the contagion of such disease or diseases, or any officer or agent charged with any duties under the provisions of this act, who shall knowingly conceal the existence of any of the said diseases or the fact of such exposure to said contagion, and who shall fail, within a reasonable time, to report to the said Commissioners, or to some duly authorized and empowered agent thereof, or to some one or more of such officers or agents, their knowledge or their information in regard to the existence and location of said diseases or of such exposure thereto, shall be deemed guilty of a misdemeanor, and shall be punishable as provided in section four of this act.

§ 6. That when the owner of animals decided under the provisions of this act, by the proper authority, to be diseased or to have been exposed to said contagion, refuses to accept the sum authorized to be paid under the appraisement provided for in this act, it shall be the duty of the Commissioners to declare and maintain a rigid quarantine as to the animals decided as aforesaid to be diseased or to have been exposed to any of said diseases, and of the premises or places where said cattle may be found, according to rules and regulations to be prescribed by said Commissioners, approved by the President, and published as provided in the third section of this act.

§ 7. That no person or persons owning or operating any railroad, nor the owner or owners or master of any steam, sailing, or other vessel within the United States, shall receive for trans-

portation or transport from one State or Territory to another State or Territory or to any foreign country, or from any State or Territory into the District of Columbia, or from the District of Columbia into any State or Territory or to any foreign country, any cattle affected with any of the diseases named in section two of this act, or that have been exposed to such diseases, especially the disease known as contagious pleuro-pneumonia, knowing such cattle to be so affected or to have been so exposed; nor shall any person or persons, company or corporation, deliver for such transportation to any railroad company, or to the master or owner of any vessel, any cattle, knowing them to be affected with or to have been exposed to any of the said diseases; nor shall any person or persons, company or corporation, drive on foot or transport in private conveyance from one State or Territory to another, or from any State or Territory into the District of Columbia, or from said District into any State or Territory, any cattle, knowing the same to be affected with or to have been exposed to any of said diseases. Any person or persons violating the provisions of this section shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be punished by fine not exceeding the sum of five thousand dollars or by imprisonment not exceeding one year, or by both fine and imprisonment.

§ 8. That it shall be the duty of the several United States district attorneys to prosecute all violations of this act which shall be brought to their notice or knowledge by any person making the complaint under oath; and the same shall be heard in any district or circuit court of the United States or Territorial court of general jurisdiction holden within the district in which the violation of this act has been committed.

§ 9. That the said Commissioners are hereby authorized to appoint a secretary of the said Board, subject to the approval of the President of the United States, who shall receive a salary at the rate of three thousand five hundred dollars per annum for his services during the time in which, under the provisions of this act, the services of the said Commissioners shall be required. The said Commissioners shall keep an office, and shall make and

preserve a full record of all rules and regulations promulgated under the provisions of this act, of all payments and expenses hereunder incurred, and all other transactions performed by said Commissioners in the discharge of their duties as herein provided; and the said Commissioners shall, on or before the first Monday in November of each year, during their continuance in service, and at such other times as they may deem conclusive to the public interests, or as they may be required so to do by the President of the United States, report to him full and accurate accounts of their expenditures and other proceedings under the provisions of this act, and of the conditions of said diseases throughout the United States, to be by him communicated to Congress. Whenever the functions of said Commission shall be suspended or terminated, it shall turn over to the Commissioner of Agriculture all its books, papers, records, and other effects, taking his receipt therefor, and he shall remain the custodian of the same until such time as the functions of said Commission may be restored.

§ 10. That the said Commissioners shall have power, and are hereby authorized, to employ skilled veterinarians, and such other agents and employees as they may deem necessary to carry into effect the provisions of this act, and to fix the compensation of the person or persons so employed, and to terminate such employment at their discretion; and they are authorized, out of the moneys by this act appropriated, to make such expenditures as may be needed for the actual and necessary traveling expenses of themselves and their said employees, payment of such employees, office expenses, stationery, expenses of disinfecting premises, cars, vessels, and other places, destroying diseased and exposed animals and paying for the same, and such other expenses and expenditures as they may find to be actually necessary to properly carry into effect the provisions of this act.

§ 11. That the moneys appropriated by this act shall be paid over to the secretary of said Commission, from time to time as the same may be found to be needed, upon requisition made by the said Commissioners, and shall be disbursed by the said secretary of said Commission only upon vouchers approved by said Commissioners or by a majority of them. The said secretary

shall, before entering upon the duties of his office, take an oath to faithfully discharge the duties thereof, and shall enter into a bond to the United States, with sureties to be approved by the Secretary of the Treasury, in such sum as he may designate, conditioned for the faithful accounting for all moneys received by the said secretary of the Commission under the provisions of this act.

§ 12. That for the purpose of carrying into effect the provisions of this act the sum of one million dollars, or so much thereof as may be necessary, is hereby appropriated out of any moneys in the Treasury not otherwise appropriated.

§ 13. That all acts and parts of acts inconsistent or in conflict with the provisions of this act be, and the same are hereby, repealed but this act shall not operate to repeal an act entitled "An act for the establishment of a Bureau of Animal Industry, to prevent the exportation of diseased cattle, and to provide means for the suppression and extirpation of pleuro-pneumonia and other contagious diseases among domestic animals," approved May twenty-ninth, eighteen hundred and eighty-four, except in so far as said act provides for extirpating the diseases named in section two of this act.

CORRESPONDENCE.

PROF. WALLEY EXPLAINS.

EDINBURGH, Dec. 14, 1886.

Editor American Veterinary Review :

In your issue of this month, Mr. Bowhill has done me the honor of referring at some length to my published views on "Swine Plague," and while appreciating this honor, I must ask him to excuse me if I direct his attention to several inaccuracies on his part.

1st, The title of Swine Fever. Mr. Bowhill objects to me using the term *eruptive fever*, stating (a) "that there is no such thing as a specific fever that has lesions produced only by the rise of temperature;" (b) That "swine-plague is by no means an eruptive disease (as I have seen it in America) if by eruption Prof. Walley means skin complications."

Mr. Bowhill's supposition—that rise of temperature does not alone produce lesions—is self-evident, nor do I suppose that any one will contend that it does.

The term eruptive fever may, in my opinion, be very aptly applied in swine-plague, and I fancy was so applied in the first instance to similar diseases by a wiser head than either mine or Mr. Bowhill's, and if in any disease the skin lesions deserve the term of eruption, those of swine fever certainly do—as I describe in my paper on the subject.

2nd, Mr. Bowhill charges me with neglect of the work of Messrs. Detmers and Salmon. Had I been conversant with the writings of these gentlemen, I should, with pleasure, have noticed them.

3d, *In re* pulmonary lesions, Mr. Bowhill should have left out the word “every,” and he should have reproduced accurately my statement on this point.

4th, *In re* the condition of the fœces, Mr. Bowhill should have read into pp. 21, 22 of my paper, and he would there have found that I state—“But more largely they (the fœces) will be found (*a*) in the form of small concrete masses, etc; (*b*) in the form of large masses of a very dark color, of firm consistence, very cohesive, etc.” I am,

Your ob't serv't,

THOMAS WALLEY.

AN APPEAL FOR MORE INTEREST IN MEETINGS.

PROVIDENCE, Jan. 5. 1887.

Mr. Editor :

In the January number of the REVIEW is a notice of the meeting of the United States Veterinary Medical Association, to take place in Philadelphia next March. I hope there will be a corporal guard in number at least, but if the meeting is not more interesting than it generally is, the number, however small, will not be half paid for going, for I have no doubt that there will be the regular amendment to the constitution and by-laws and the ordinary amount of quibbling over some technical points, that are neither entertaining or instructive—as has been the case for

the past ten years; now, if the profession at large feel as I do, they feel that to go three or four hundred miles away, spend twenty-five dollars, or more, two nights' and one day's travel, for one day's poor meeting, is undoubtedly a great waste of time at least, if not of money.

Yours, respectf'y,

C. H. PEABODY.

[We sincerely hope our correspondent is in error in this case, and feel assured that, with all his complaining, he will be there, as he says: "Well, anyhow, good or bad meeting, I will go and be there to see the boys."—ED.]

OSSEOUS PORCINE LITTER.

KINGSTON, ONT, Dec. 19, 1886.

To the Editor

DEAR SIR:—An interesting case has just come to my notice (or rather the full developments of it.)

Last spring, I was consulted by a farmer regarding a sow; she had been served by a boar four and a half months previous, and had every appearance of "being pregnant, but no young were brought" forth.

I heard nothing more about the case until to-day, when the owner states that he killed the sow yesterday, and, upon examining the womb, found the bones of several pigs in a perfect state, more principally the inferior maxillæ, scapulæ and portions of the skulls.

During the summer, he says, there was a nasty discharge from the vulva for a time; finally, the sow regained her normal condition, apparently, and being fattened, weighed at death 425 pounds.

It would be about twelve months since she was served by the boar.

M. W. SINE, V.S.

CHANCE FOR A YOUNG VETERINARIAN.

BATHGATE, DAKOTA, Jan, 11, 1887.

Principal American Veterinary College :

DEAR SIR:—Will you kindly put me in correspondence with a good, energetic young man, a graduate of your college, who is desirous of locating West, with an extensive and needy field for a V.S. This county is sadly in need of one, as there is not one in the county at present, and an unusual number of sick horses. The fact is that I never saw so many sick horses as there are here, and so few doctors. The county is 30x36 miles in extent, counts about 12,000 souls, a good railroad, and many enterprising towns; in fact, I believe it is a first-class opening for a V.S., and would like to hold correspondence with a good, capable man. I can give best of references as to the correctness of the above.

Yours respectfully,

L. K. ARMSTRONG.

ONTARIO VETERINARY COLLEGE EXAMINATIONS.

The Christmas examinations were concluded on Tuesday, the 21st of December, when the following gentlemen, third year students, were awarded the Diploma of the Council:

Geo. Dunn, Simcoe, Ont.; Jacob M. Fetzner, Centre Valley, Pa., U. S.; John F. Fisher, Brandon, Manitoba; D. Bell, Brampton, Ont.; W. S. Henderson, Arthur, Ont.; J. H. Hennessey, Hamilton, Ont.; William Hunter, Brampton, Ont.; W. S. Hibbard, Caledonia, Ont.; G. N. O'Leary, Pickering, Ont.; R. H. McQuinch, Dakota, U. S.; W. H. McNaughton, Vienna, Ohio, U. S.; J. E. Rayen, Girard, Ohio, U. S.; W. H. Riddell, Orangeville, Ont.; C. Wagg, Goodwood, Ont.; A. C. Wolfe, Durham, Ont.; J. H. Thornton, Georgetown, Ont.; M. E. Young, Belleville, Ohio, U. S.; T. H. Stirling, New Hamburg, Ont.

J. E. Rayen, J. F. Fisher, W. S. Henderson and G. N. O'Leary passed with great credit.

C. H. Shirland, Madrid, N. Y., passed a Primary examination in *materia medica*.

LIST OF VETERINARIANS AND PRACTITIONERS REGISTERED IN COUNTY CLERK'S OFFICE, IN BROOKLYN, KINGS COUNTY.

<i>Names.</i>	<i>Colleges.</i>
Bowers, Geo.....	American Veterinary College.
Finnigan, —.....	Columbia “ “
Hartingson, M.....	Royal College of Copenhagen, Denmark.
Hodgson, J. R.....	American Veterinary College.
McGee, W. J.....	“ “ “
Van Mater, Geo. G.....	“ “ “

IN WESTCHESTER COUNTY.

<i>Name.</i>	<i>College.</i>
Bradley, Seamen.....	American Veterinary College.

NON-GRADUATES.

Allaire, J. E. (colored.) (2)	Marsh, A. B.
Carpenter, T. H. (1)	Miller, Monsell F.
Dolan, Rich.	Mollenaur, A. J.
Halleck, W. S.	Willer, Elbert.
Horton, Caleb.	
(1) Swears he has practiced for 50 years.	
(2) “ “ “ 30 “	

IN SCHOHARIE COUNTY.

<i>Name.</i>	<i>College.</i>
Marsh, J. Wallace.....	Columbia Veterinary College.

NON-GRADUATES.

Benedict, I. W.	Spickerman, Abram.
Brockway, Lewis A.	Winor, George B.
Feeck, Charles R.	Young, Nathais W.
Rowley, Nelson.	Zimmer, Jacob N.
All of which have practiced three years.	

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY SOCIETY.

The annual meeting of the New York State Veterinary Society, was held on Tuesday evening, December 14th, at the American Veterinary College, the President, Dr. R. W. Finlay, in the chair.

Members present—Drs. Liautard, Burden, Field, C. C. Cattanach, J. S. Cattanach, Duane, L. McLean, R. A. McLean, Dixon, Bowers, Pendry, Cuff, Berns, Birdsall, Machaw, R. W. Finlay, R. A. Finlay, R. Ogle, Jacobus.

After the reading of minutes of the previous meeting, a motion to adopt the same was made, immediately followed by an objection by Dr. L. McLean, who asked to have that portion relating to Dr. Faust's report of affected cattle in his district re-read, which request, on being complied with, he stated that a wrong term had been used and moved that the word *Filari* be struck off. Considerable discussion followed, during which Dr. Liautard stated that he had received a letter from Dr. Faust, relating to the disease, in which the proper term had been used; the minutes were finally adopted as read.

Dr. Cuff reported that the committee appointed by N.Y.S.V.S. to confer with a like committee appointed by N.Y.C.V.M.S. had met on numerous occasions, that they had appointed a sub-committee with full power to act as they saw fit; that this sub-committee had met and discussed the question; that they saw fit to call a meeting of the two original committees and at that meeting the sub-committee resigned and on their resignation a Board of Trustees was appointed to take charge of a fund then established, said fund to be used in carrying out the provisions of the veterinary bill as recently passed in the Legislature.

The Board of Trustees are Drs. Eisner, R. McLean and W. E. Cuff. Dr. R. A. McLean stated that there was a great many men practicing who had no legal right to do so and also that the bill had been neglected, inasmuch as the date relating to the granting of certificates had been left out, but whether it was changed after or before our committee had left Albany he was not able to say. Dr. W. H. Pendry, of the Committee on Legislative Matters, took the remarks of Dr. R. McLean as an insinuation to him, and, in refutation, stated that just about the time the act was going into force he wrote to the Secretary of State for a certified copy of the bill, and when he received it he noticed for the first time that the date relating to certificates had been left out.

Dr. R. A. McLean stated that he had seen the act as in the original bill in law books published recently. After some further discussion Dr. Liautard said it was a very important matter and that the society should investigate it. The report of the committee was accepted, and a motion made and carried that the chair appoint a committee of three to investigate the matter. The following were appointed: Drs. Liautard, R. McLean and W. H. Pendry.

The election of officers for the year 1877 was then taken up, with the following result: President, Dr. W. H. Pendry; 1st Vice-President, Dr. T. Birdsall; 2d Vice-President, Dr. Geo. Bowers; Secretary and Treasurer, Dr. W. E. Cuff. Board of Censors—Drs. R. A. McLean, D. Dixon, W. J. Coates, R. A. Finlay and R. Ogle.

The newly elected President was then conducted to the chair and welcomed by the retiring President, who addressed the meeting with a few well placed remarks. Dr. Pendry accepted the honor conferred on him as a mark of appreciation of his efforts to elevate the veterinary profession. Dr. L. McLean moved a vote of thanks be extended to the retiring President, which was carried.

A communication was then read from Mr. P. O'Halloran, and a motion being put and carried, it was referred to the Board of Censors.

After some discussion as to who would be the next essayist, a motion to adjourn was carried.

WM. E. CUFF, D.V.S., Secretary.

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY

Veterinary surgeons from almost every county in the State of New Jersey met in convention at the American House, in the city of Trenton, on Thursday, the 9th day of December, 1886, to consider the subject of veterinary legislation.

The legislative committee, of which Dr. J. W. Hawk, of Newark, was chairman, met at 10 A. M. After considering the merits of several bills, the committee endorsed the bill drafted by Dr. Wm. Herbert Lowe, of Paterson. The object of the bill is to regulate the practice of veterinary medicine and surgery in the State of New Jersey, and is similar, in many respects, to the one in force in regard to practitioners of human medicine.

At 11.30 A. M., the session was called to order by President Miller, of Camden County. After calling the roll, Dr. Lowe read letters from Dr. W. H. Pendry, secretary of the New York State Veterinary Society, Dr. D. J. Dixon, of the American Veterinary College, New York City, and others, in which they expressed a deep interest in the affairs of the Association.

The Secretary read the minutes of the Long Branch meeting which were adopted.

The Treasurer, Dr. L. R. Sattler, of Newark, reported in regard to the finance of the Association. The Secretary made no report.

Dr. Miller next called for the report of the committee on legislation. The chairman stated that they were in favor of the bill drafted by Dr. Lowe. By this time Dr. E. M. Hunt, Secretary of the New Jersey State Board of Health, had arrived, and the President took advantage of the opportunity by requesting him to give his views upon the subject under consideration before the Association took action. Dr. Hunt said that the bill just recommended by the legislative committee was an excellent one, and that he approved of it in most respects. He then proceeded to review it section by section. The third section was to the effect that any person who shall have been practicing veterinary medicine or surgery in the State, for a livelihood, for a period of not less than ten years immediately preceding the passage of the act, without having obtained a diploma from a legally chartered or incorporated veterinary college or university, as provided for in section 2 of the act, may, at the next regular meeting the Veterinary Medical Association of New Jersey, present himself to the Board of Censors for examination, and if he should be found worthy, would be allowed to register and continue practice.

Dr. Hunt said that any person who had had twenty years experience in the practice of *human* medicine and surgery in one locality in the State immediately preceding the passage of a certain act of the Legislature, could make affidavit as to the facts and register and would be allowed to continue practice without undergoing any examination. He said that if the State Society of Veterinary Surgeons examined non-graduates, and gave them certificates testifying that they were worthy practitioners, we would elevate their standing much more than we would by allowing them to register without any examination. If this latter course were adopted, he continued, it would be an easy matter to ascertain the professional standing of any particular practitioner, whether a college graduate

or not, the affidavits of non-graduates would be on file with the diploma of graduates, and could be examined in the County Clerk's office. Dr. Hunt's suggestions were approved of and were incorporated in the bill when it was adopted by the Association.

The Board of Censors reported in favor of R. E. Stanwood, of Freehold, and he was elected to membership. Several applications for membership were made, after which the following gentlemen were proposed for honorary membership:

Dr. Huidekoper, Dean of the Veterinary Department of the University of Pennsylvania, and Dr. Wm. L. Zuill, of the same institution, by Dr. Miller; Geh. Med. R. Prof., Dr. Leisering. Dresden, Saxony, by Dr. Sattler.

After the transaction of routine business, the members of the Association listened to an able address by Dr. Hunt on veterinary matters in New Jersey. He told of the work being done by the State Board of Health in stamping out pleuro-pneumonia and other contagious animal diseases prevalent in the State. He spoke at some length of the benefits to be derived from the Association—social, scientific and otherwise. He said we, as veterinarians, were fortunate in not having any old troublesome laws to deal with, as had the practitioners of human medicine; that, in his opinion, little legislation was needed beyond the passage of the bill which had been endorsed by the Association. Dr. Hunt said that the medical men of the State had failed except in getting a general law passed. He said that the Association ought to be very careful who they admitted to membership, and consequently that a very important duty devolved upon the Board of Censors.

The Doctor extended an invitation to the members of the Association to visit the library of the State Board of Health at any time. He further stated that a member would be allowed to take a veterinary work from the library upon the recommendation of the President or Secretary of the Association.

The Chair appointed Drs. Hawk, Smith, Dunstan, Cooper and Loblein, with Drs. Miller and Lowe, members ex-officio, as a Committee on Legislation, to represent the interests of the Association at Trenton, and to present the proposed bill to the Legislature.

Upon motion of Dr. Loblein, the Secretary was instructed to have copies of the bill printed and sent to members of the Association as well as to the Legislature.

The President appointed Dr. Loblein essayist for the next regular meeting.

The Association decided to hold the April meeting in Newark, the place of meeting to be selected by a committee consisting of Drs. Sattler, Vogt and Hawk, all of Newark.

After a prolonged session, the members adjourned for dinner.

WM. HERBERT LOWE, D.V.S., Secretary.

ANNUAL MEETING OF THE OHIO STATE VETERINARY MEDICAL ASSOCIATION.

The Ohio Veterinary Medical Association held its annual meeting in Piqua, Ohio, on Tuesday, the 11th of January, at 10 A. M. Dr. Cotton, President, being

absent, Dr. Howe was called to the chair, who called the meeting to order. The Secretary called the roll.

The minutes of the previous meeting were then read and were approved. Dr. J. V. Newton then read a very instructive paper on kidney disease in a stallion at Kalamazoo, Michigan, which created a very lively discussion, which was followed by one by Dr. J. C. Meyer, Jr., on the uses of the galvano-cautery. He had had very good success in using it. His paper also created another lively discussion on firing, etc. A motion to adjourn until 1:30 P. M. carried. Members were then requested to meet at Dr. J. S. Butler's infirmary at that hour to operate on several cases he had collected together for that purpose.

A number of operations were then performed by Dr. Meyer, Jr., on a bone spavin with the galvano-cautery; on a case of ventral hernia, by Dr. Howe; on firing with the thermo-cautery, by Dr. Shaw; on a malignant growth of the inferior maxillary with caries of the bone, by Dr. G. W. Butler, who caponized a number of chickens, and by Dr. Tiffany, who operated on a case of crib-biting.

At the evening session the following officers were elected: President, J. C. Meyer, Jr., Cincinnati; 1st Vice-President, W. R. Howe, Dayton; 2d Vice-President, W. Shaw, Dayton; 3d Vice-President, W. E. Wight, Delaware; Recording Secretary, W. A. Labron, Xenia; Corresponding Secretary, A. H. Logan, Bellefontaine; Treasurer, J. V. Newton, Toledo. Censors—Drs. Wight, Kerr, Shaw, Hillock, G. W. Butler.

A motion was passed to elect Dr. J. A. Lee, of Lima, a member of this Association. Dr. Lee thanked the association in a few well chosen remarks. The chair appointed Drs. Hillock and Butler on Auditing Committee.

Dr. Meyer read a letter from Dr. Pendry, of New York, in regard to legislation regulating the practice of veterinary medicine and surgery. Considerable discussion took place upon the reading of the act just passed in New York and which did not meet the approval of all the members.

It was moved and seconded that a committee be appointed to draft a bill to present to the legislators of the present session relating to regulating the practice of veterinary medicine and surgery in this State.

The President appointed the following as such committees:—P. D. Yonkerman, Cleveland, Howe and Shaw, of Dayton, Lee, of Lima, and J. C. Meyer, Jr., of Cincinnati. They will soon hold a meeting in Dayton to take action on the matter. Prof. Detmers, of Columbus, was at present drafting a bill for the same object. It was thought best to write him to meet the committee at Dayton and make some compromise.

Dr. P. D. Yonkerman was then called upon to read his paper on "Veterinary Medical Jurisprudence," which was followed by a very lively discussion.

Dr. Hillock then read an interesting paper on the operation of Lithotomy recently performed by himself. This paper was also well discussed.

Dr. Yonkerman read a second paper entitled, the "Veterinarian in Society," which was a good one. It was moved and seconded that, with Dr. Yonkerman's consent, both his papers be published in the VETERINARY REVIEW.*

The matter of reinstatement of Dr. Franks was laid over until next meeting, and in the meantime, he was requested to send in his petition in writing to the Secretary before the next meeting.

*These have been received and will be published at the earliest opportunity.—[Ed.]

It was decided not to hold any June meeting this year; also the semi-annual meeting to be held in July instead of September, as formerly done. It was also decided to hold it the second Tuesday in July in the city of Cleveland.

T. B. Cotter, of Mt. Vernon, D. L. DeVoe, of Ripley and S. H. Kent, of Cadiz, were appointed to read a paper at the next meeting.

A vote of thanks was tendered Dr. Butler for securing cases for operation, etc., also to Drs. Meyers, Hillock, Yonkerman and Newton, for very able papers.

The thanks of the meeting were also tendered Dr. Tiffany, of Jacksonville, Ill., for his efforts in trying to have his operating table here for exhibition, but owing to the railroad being so slow, it did not arrive.

A vote of thanks was also tendered Mr. Collins, of the Bassett House, for his kindness in furnishing a place for the meeting, and other favors. Meeting then adjourned.

W. A. LABRON, V.S., Recording Secretary.

SEMI-ANNUAL MEETING OF THE MISSOURI ASSOCIATION OF VETERINARY SCIENCE AND COMPARATIVE MEDICINE.

The semi-annual meeting of the Missouri State Association of Veterinary Science and Comparative Medicine was held at the State University, Columbia, Mo., December 6th. The Association was complimented by the presence of Professors McAlister and Moss, members of the medical faculty of the University. Balloting for officers for the ensuing year resulted in the re-election of Paul Paquin as President; T. E. White, First Vice-President; James Johnson, Second Vice-President; H. B. Adair, Treasurer; H. F. James, Secretary; H. B. Platt, C. W. Crowley, A. Ronif, Censors. Professor McAlister delivered a short and impressive speech on the importance of comparative medicine. At this stage the meeting adjourned for a few hours, and the visitors were invited to the study of Dr. S. S. Laws, President of the University, who welcomed them to Columbia, and afterwards manifested the kindest feelings towards the veterinary profession in the long and interesting conversation that ensued. The members next enjoyed the hospitality of Dr. Paquin, who proved himself as accomplished a host as he is a bacteriologist.

The meeting was called to order again at 2 p. m. by the President, with a few appropriate remarks. We were pleased to have with us Drs. McAlister, Moss and Gordon, several resident physicians and a number of students.

H. F. James, of St. Louis, read a paper on pleuro-pneumonia, in which he quoted some words from a letter which he had lately received from Professor Smith, of the Ontario Veterinary College, Toronto, Can., to the effect that the Professor believed we would be forced to resort to inoculation to successfully combat pleuro-pneumonia, and stating that from what he had seen of it in Edinburgh with Mr. Rutherford, its results were beyond the range of speculation. This opinion, coming from such a widely known and eminently practical authority, carried with it due weight. The discussion which followed shifted to tuberculosis, on which subject Dr. Adair, of Kansas City, was to have read a paper.

Dr. T. E. White, of Sedalia, in answer to some inquiries of Drs. McAlister and Moss, gave an instance of the transmission of consumption or tuberculosis

from a cow to two children, who died within one year of each other. Post mortems on the children showed tubercular lesions. There was no consumptive taint on either the maternal or paternal side as far back as the family records went. The father, who was a physician, disbelieved both in the existence of tuberculosis in cows and its transmissibility to the human being through the milk, and, although warned by a veterinarian that his family milch cow was tuberculous, would not part with her until the loss of his children forced him to order her destruction. A loathsome mass of tubercle was found in the chest, and the childless man was overwhelmed with grief at the sad results of his obstinacy. There are any number of cases equally conclusive.

Dr. Paul Paquin gave some very interesting points gleaned in his recent trip to France. The laboratory which he is getting into working order at Columbia cannot but be of the greatest practical benefit to the State, and its utility is endorsed by every member of the Association.

The following gentlemen were unanimously elected honorary members of the Association: Prof. J. W. Sanborn, Dr. S. S. Laws, Prof. McAlister and Prof. Moss, of the State University, Columbia, and J. H. Holmes, Esq., Agent Humane Society of Missouri, St. Louis.

A vote of thanks was extended to the medical faculty for their kindness in providing us with a meeting place, and to Dr. Paul Paquin for his royal entertainment of the Association.

After happy speeches from Drs. McAlister, Moss and Paquin, the meeting adjourned to meet again at 10 A. M., the second Monday of July, at St. Joseph, Mo.

H. F. JAMES, Secretary.

MARYLAND STATE VETERINARY MEDICAL ASSOCIATION.

This Association, which has just been organized, has elected for its officers: President, W. Dougherty, D.V.S.; First Vice-President, C. L. Moulton, D.V.S.; Second Vice-President, Thomas W. Spranklyn, D.V.S.; Secretary-Treasurer, H. Martenet, D.V.S. Meetings will be held monthly in various parts of the State, and occasionally in Washington, D. C.

W. H. MARTENET, D.V.S., Secretary.

KANSAS STATE VETERINARY MEDICAL ASSOCIATION.

At a meeting of the Veterinarians' Association of the State of Kansas, held at the office of State Veterinarian Holcombe in Topeka on Thursday evening, September 16th, it was determined to reorganize the Association under the name above and take out a charter under the laws of the State. The constitution adopted states the object of the Association to be to "stimulate fraternal intercourse, provide dissemination of veterinary medical knowledge, prevent practice ignorant veterinary empirics, and maintain a medical library." It was decided to draft a bill to regulate the practice of veterinary medicine in the State, which will be presented and pushed at the next session of the Legislature.

The following named were elected officers for the ensuing year: President, Dr. W. P. Epperson, of Ottawa; Vice-President, Dr. A. A. Holcombe, of Topeka; Secretary, Dr. E. R. Allen, of Kansas City; Treasurer, Dr. J. H. Wilhite, of Emporia; Board of Censors, J. H. Wilhite, of Emporia; O. W. Murphy, of Lawrence; E. R. Allen, of Kansas City; A. A. Holcombe, of Topeka, and J. C. McCasey, of Concordia.

This organization of the veterinarians of Kansas is the outgrowth of the efforts of Dr. Holcombe, and is well calculated to elevate the veterinary profession in the estimation of the people. It seems to be the determination of Dr. Holcombe and other members of the profession that "horse-doctors" and "cow-doctors" in the State shall give way to educated and regularly graduated veterinary surgeons.

NEWS AND SUNDRIES.

SUIT AGAINST DR. HOPKINS.—The following extract is taken from the *Journal*, Rawlins, Wyoming: "Veterinarian Hopkins has a suit for damages on his hands, brought by the Comanche Cattle Company, of Missouri, for detaining a lot of cattle in quarantine at the border of the territory in 1885. The cattle were *en route* to Montana. The damage is placed at \$2,500, which, it is alleged, was expended for food during the time the cattle were detained. Acting Governor Morgan referred the matter to Attorney-General Donzelman, who decided that, as the territory was not made a party to the suit, no action on his part was necessary, but he was ready to assist in any way in his power to uphold the law of the territory."—*Nat. Live Stock Journal*.

A MONSTROSITY.—It is stated that "a living heifer calf, seven weeks old, is on exhibition at 72½ Montgomery Street, Jersey City, which has three eyes, three under jaws, three tongues, three sets of teeth, and a double pair of nostrils. It is in perfect health, takes its food regularly, and is apparently thriving, was born at Orange Valley, N. J., on the farm of Mr. W. H. Hall, and is the offspring of a full-blooded bull and an Alderney cow. Veterinary surgeons (?) say it has a double set of brains, and will have at least four horns. This little freak is very docile, chews its cud the same as any other calf, but does not appreciate the public gaze."—*Ibid*.

AMERICAN VETERINARY REVIEW.

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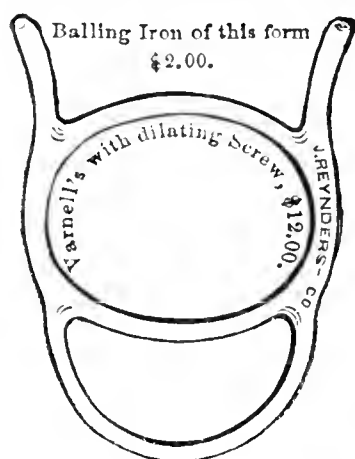
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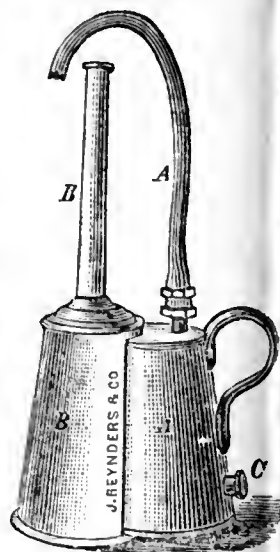
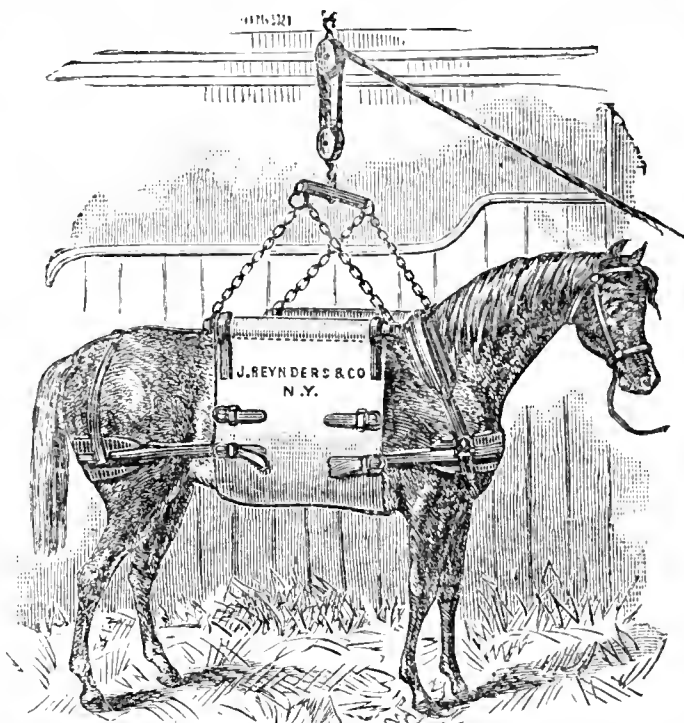
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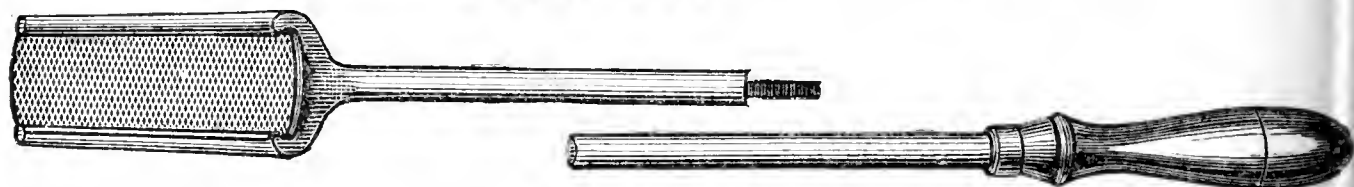
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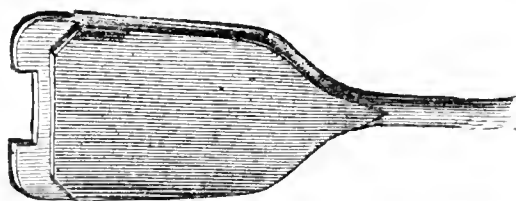


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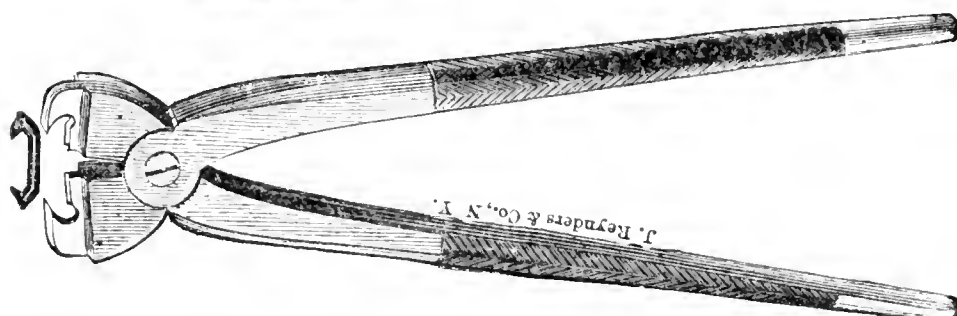
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AMERICAN VETERINARY REVIEW,

MARCH, 1887.

EDITORIAL.

CONTAGIOUS PLEURO-PNEUMONIA IN CONGRESS.—The Miller bill—the best measure to control contagious diseases and pleuro-pneumonia—referred to a committee, and is discussed by Dr. Swinburne, of New York, and Dr. Gallinger, of New Hampshire—their remarks ungentlemanly and unprofessional—their disgraceful utterances to the veterinarians—veterinary surgeons nothing—the political M.D.s know it all—contagious pleuro-pneumonia is not contagious—the bill is killed and an amendment introduced—three medical men are to be appointed—are Drs. S. and G. likely to be members of the committee—letter from Prof. Law of Cornell—his powerful remarks—his challenge to the two Congressmen. BREACH OF ETHICS—candidates for State veterinarianship—Dr. J. Gerth, Jr. and Dr. W. Folsetter—modesty is a better card and better recommendation. NOTICE—semi-annual meeting of the United States Veterinary Medical Association.

CONTAGIOUS PLEURO-PNEUMONIA IN CONGRESS.—The attention of the veterinary profession has been for some time past directed to the anticipated action of Congress in reference to the enactment of laws on the subject of contagious diseases of animals, and, principally, with reference to the probable course of legislation in relation to contagious pleuro-pneumonia. We have laid before our readers a copy of the text of what has been denominated the “Miller bill,” which has been introduced in the House and duly referred, and which is now in the hands of a committee; and we have expressed our approbation of its provisions, with the hope that it may eventually become a law, as furnishing perhaps the best measure of protection which the Government can devise for ridding the country of this most terrible lung plague of bovines.

At the present writing, however, there is no visible probability of the success of the "Miller bill." That it will become a law by the action of the present Congress we do not anticipate. Probably one of the principal causes of its failure to receive an effective majority support, is one to which the defeat of any other good measure might be attributed, to-wit: the course adopted by two of the members of the committee having the matter in charge, Dr. Swinburne, of New York, and Dr. Gallinger, of New Hampshire. The remarks attributed to these two political M.D.s during the discussion of the bill betray evidences of the most disgraceful ignorance, and are accompanied by such shameful allusions to veterinary practitioners and practice, that we cannot refrain from expressing our contempt for the meanness and malice which taint the language they have thought proper to utter. To have dared to denounce the Chief of the Bureau of Animal Industry as either chargeable with ignorance or guilty of deceit, and in their insolence to apply to him such an epithet as "would-be national butcher"—to make the audacious charge that "Government veterinarians, any of them, know nothing about pleuro-pneumonia"—to contend in their stupidity that "it [pleuro-pneumonia] is not contagious," and to give "the lie" to those whose intelligent investigations have led them to a truer conclusion, as the New York M. D. does in the specially selected specimens of Billingsgate which seem to find favor with his palate, are offences against truth and decency which cannot be contemplated without a sensation of shame in the minds of readers of integrity and refinement. Such publicly affirmed ignorance and conspicuously displayed impudence as this Congressional orator exploited, is, however, appropriately mated and echoed by the no less wonderful rhetorical essay of his emulative colleague, the M.D. from New Hampshire, who, from his invaluable endowment of personal ability and crowded reservoirs of medical information, rises and informs us that "while pleuro-pneumonia is simply an inflammation of the pleura and of the lungs, no medical man has ever yet dared to say that it is contagious." These medico-political magnates have either become woefully rusty in their medical studies, or they have been from the beginning, wonderfully deficient in the sum of their acquirements.

Professor Law, in a long letter, has taken these two medical doctors to task, and has thoroughly exposed their ignorance and their stupid pretentiousness. In a few well expressed pages he has demonstrated their lack of knowledge of comparative pathology, and has made them feel (if that is within their capacity) that the veterinarians, whom they deliberately and wantonly insult, are their evident superiors in respect to the degree they have achieved in the scale of medical knowledge and professional skill—a degree which neither of them, or their confreres, who are no better endowed, can ever hope to reach.

Professor Law's challenge will, we apprehend, be issued in vain, but it will not be questioned that he has fixed upon them an ineffacable stigma of gross ignorance, if not of downright mendacity, inasmuch as some veterinary editor, a pretended professor of veterinary medicine, with some other M.D.—in New York received the very first public rumor of the existence of the disease in Long Island in 1879.

Instead of the bill which has received the intelligent endorsement of so many minds fully competent to judge in the matter, the notable Dr. Swinburne has unluckily succeeded in obtaining an amendment, by which three "medical" men (which we suppose to be a synonym for "non-veterinarian") are to be appointed to carry the law into effect. What may be the purpose of this we are curious to know. Is it to determine the nature of the disease, or to decide whether it is or is not contagious?

Happy amendment! happy suggestions! Probably, in due respect to their ability, Drs. Swinburne and Gallinger will be two out of the three chosen ones, in order to secure an "intelligent" and competent determination in cases of doubtful diagnosis. In one respect this will be a nice arrangement for Drs. S. and G., inasmuch as they will find no difficulty—having already decided the point—in reporting the non-contagiousness of every case, *nolens volens*, which will insure a promptness and despatch in their reports quite unusual and highly commendable.

If this should be the case it will, moreover, be a good thing for the doctors, affording them an opportunity for the acquirement of some practical knowledge on the subject of contagious pleuro-

pneumonia. Their enlightenment will probably cost the country some millions of valuable dollars before the end is reached, but of what concern will such a consideration be in their sight?

We print Professor Law's letter with pleasure. He deserves well at the hands of his brethren for his strong defence of veterinary medicine and the practitioners in this department of science, and he ought to be gratefully recognized as one of the most earnest among the protectors of the lives and health of the 30,000,000 head of cattle which constitute so important a portion of our national wealth.

BREACH OF ETHICS.—In our last number we offered some brief remarks concerning the erroneous judgment which sometimes resulted in the elevation to official position of young graduates yet unripened for the important duties pertaining to their hastily acquired positions. These errors are sometimes easily excusable upon the plea of necessity and the emergency of a hurried demand for veterinarians coincident with a scarcity of eligible candidates. But there is another error which has before now fallen under our observation, which is possibly more frequently committed, and which consists in the appointment of men entirely unfitted for the places they are called to occupy, not only as veterinarians by education, but as trained professional men, by persons not acquainted with the ethics of their professions, and who would carefully abstain from any step which might subject them to a charge of being guilty of any action that savors in any way of quackery. The following extract will illustrate the suggestion brought to our mind in relation to this subject:

“Regarding the appointment of a State veterinarian for Montana, we find the following in the *Live Stock Journal*, Helena: ‘The office of veterinary surgeon does not go begging, as there are several applicants for the position. Of this number two are especially good—one is the State veterinarian of Nebraska, Dr. Julius Gerth, Jr., and the other, Dr. Folsetter, of Evansville, Ind. Both are highly recommended, and no doubt could satisfactorily perform the duties of the office. These gentlemen ask a much higher salary than is paid at present. Such an important interest as stock-raising is in Montana should be guarded by the best talent to be procured, and if the pay is not high enough, raise it. A first-class man deserves a first-class salary, and it is poor economy to have anything else.’”

But the card we copy below will scarcely recommend to the appointing power the gentleman who thus announces himself, and who, we feel assured, was never taught in any of the colleges where he graduated, that such a method of acquiring publicity and securing a lucrative practice as the issue of the card with which he makes his bow to the horse-owners and cattle-growers of Texas, was in accordance with any recorded code of ethics prevailing in the best professional circles:

DR. W. FOLSETTER, VETERINARY SURGEON,

Graduate of the Royal Veterinary College, London, England; also of the Ontario Veterinary College, Toronto, Canada; Fellow of the Veterinary Medical Association, of London, England; Corresponding Veterinary Surgeon to the State Board of Agriculture of Illinois, and Veterinary Inspector to the American Fat Stock Show, Chicago, Ill., is at present located at Dallas, Texas, and will treat diseases of all domestic animals. Special attention given to lame horses and diseased and irregular teeth. CATTLE SPAYED IN A SCIENTIFIC MANNER, and will make liberal arrangements with any one wishing to learn any or all of the different modes of operating. Correspondence solicited. Address, DR. W. FOLSETTER, care *Texas Farm and Ranch*, Dallas, Texas.

NOTICE.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

The regular semi-annual meeting of this Association will be held in the University of Pennsylvania (Veterinary Department), Thirty-sixth and Pine Streets, Philadelphia, on Tuesday, March 15th, 1887.

Comitia Minora meets at 10 A. M.; regular session of Association at 11 A. M.

A number of papers are promised, and a full and interesting meeting is assured.

CHAS. B. MICHENER, Secretary,
1779 Broadway, New York.

LOSSES IN THE UNITED STATES BY HOG CHOLERA.—According to the report of the United States Department of Agriculture, the value of hogs lost by hog cholera during the past year reached nearly fifteen million dollars.

ORIGINAL ARTICLES.

CONTAGIOUS PLEURO-PNEUMONIA IN CONGRESS.

A Letter from Prof. Law, of Cornell University.

The lower house of Congress has recently been the sphere of a spectacle which might well be held unique in this enlightened nineteenth century, and which demands to be held up before the people of America in a broader light than is furnished by the limited circulation of the *Congressional Record*. A bill was being considered which had for its object the entire extinction of the lung plague of cattle (a contagious disease which was imported from Europe in 1848); one which has in the past eight years cost us on our exports to England alone a yearly loss of over \$2,000,000, and one which in the last three years, since its extension into the Mississippi Valley, has cost in addition several millions per annum. A further extension to the unfenced stock-raising territories is now imminent at the cost of a further yearly loss of tens or scores of millions additional. During forty years, ending in 1876, Great Britain lost \$500,000,000 from this plague on an average stock of 6,000,000 head of cattle. We therefore should lose at least \$1,000,000,000 in the same length of time upon our 30,000,000 cattle in case this plague were acclimatized at the source of our cattle trade, and sent in steady streams through all its divergent branches. The bill under debate proposed to appropriate \$250,000 to *stamp out* this plague and restore us to the vantage ground we occupied before its importation in 1848.

It might well have been expected that a body of representatives paid by the people for attending to this matter would have given some little attention to the basis of this bill, so that they could at least act upon it with intelligence, or if they could not or would not do this that they would at least have voted according to the judgment of the Agricultural Committee, to whom they had delegated their sacred duty of studying and deciding

upon that which they had no time or disposition to attend to themselves.

In place of this this political body voted by 114 to 25 to appoint three experts *to ascertain whether the disease is actually contagious and to report to Congress*. It would be fully as rational to inquire as to whether small-pox is contagious.

Had the most ignorant man in the veterinary profession asked for a commission to determine the nature and contagiousness of the lung plague at this late date, what a hue and cry would have been raised, and justly, against place-seekers and prodigal wasters of public money! How much more when it is proposed to create as such a commission three medical men who are in no sense experts in the diseases of animals, to determine a matter which has been demonstrated beyond all cavil on many occasions, on the largest scale, and in different parts of the globe! While they sit and learn for themselves what has been already so well learned by others, the country will have lost at least \$5,000,000 by the delay, ostensibly to save \$250,000 which it was proposed to appropriate for quarantine and the extinction of the plague.

But as the result appears to have been mainly secured through the efforts of the two political M. D.s it seems only fair to glance at the positions taken by these would-be masters of medical lore.

Dr. Swinburne, of New York, in the course of a tirade against the Government veterinarians, as reported in the *Breeder's Gazette*, said: "The truth is they do not know anything about pleuro-pneumonia, any of them, and that is the reason I ask for a commission. Let us have one solid doctor from Boston, another from Philadelphia, and another from the South." When asked by Mr. Funston, of Kansas, "Has not every veterinary surgeon who has reported to the Government reported this disease to be pleuro-pneumonia? Do not all agree as to this?" He answered: "I do not know that to be the fact. They have confessed themselves that it is not."

Mr. Funston—Do they not say it is contagious?

Dr. Swinburne—If it be pleuro-pneumonia it is not contagious.

Mr. Funston—Do not they say it is pleuro-pneumonia?

Dr. Swinburne—I cannot say.

Mr. Funston—Have you not read this in the report? Do they not say it is pleuro-pneumonia?

Dr. Swinburne—If they do I think they lie.

His co-worker, Dr. Gallinger, of New Hampshire, said: “If gentlemen will turn to their dictionaries and look at the meaning of the word pleuro-pneumonia, they will find that it signifies an inflamed condition of the pleura and of the lungs. Every medical man in this house has treated many cases of pleuro-pneumonia in the human family, and *no medical man has ever yet dared to say, upon his honor and reputation, that in the human family it is a contagious disease.*”

“I stand here, sir, to say that *we have no proof at all that the so-called pleuro-pneumonia in the cattle of this country is a contagious disease*, and if this House is to legislate upon the subject at all, let us go upon the broad ground that it is safer to employ scientific experts to determine what the disease is before we proceed to lavishly spend the people’s money in experiments to extirpate it. * * *

“*Go to the great overcrowded stock yards in the large cities, and you will find a disease called pleuro-pneumonia; go to the sinks of iniquity in the large cities, where vice and filth prevail, and you will find small-pox and scarlet fever and diphtheria among the people who are crowded there. These are filth diseases, produced by filth, as scientific men assert and have always asserted, and if you trace this disease of pleuro-pneumonia among the cattle of this country you will find that it will exist where sanitation has been neglected and where the laws of life and health have been set at defiance, and very likely it found its origin either in the cruel condition under which the cattle were transported, neglect of proper care after they were brought to their destination, or the direct result of climatic changes.* Now if we are going to spend \$200,000, or \$100,000, or \$50,000, or \$25,000 for this purpose, let us spend it to determine first whether this disease exists, and if it exists what its exact nature is, and whether or not it is contagious. My opinion is that we had better spend \$20,000 for a commission of scientific men, and give them

authority to go out and ascertain whether the disease is pleuro-pneumonia, and if it is pleuro-pneumonia whether it is contagious, and let them report to Congress.

“Then we shall have a basis upon which we can enact legislation that will really be for the benefit of the people who are interested in the cattle industry of the country, instead of being stampeded by the fears of communities where the disease confessedly does not exist at all.”

We have followed our politico-medical doctors far enough to see and demonstrate just what their medical status is. That shown, we will leave to others to say what their political status really is.

Both take the position that *if a disease is inflammation of the lungs it is not contagious.*

1st. *Will they deny that inflammation of the lungs is a very frequent condition in measles, in influenza, in pulmonary tuberculosis, in pulmonary actinomycosis, in pulmonary and pleuritic syphilis? Are these diseases, therefore, not contagious?* It must be noted here that veterinarians do not claim that the cattle disease is a simple inflammation of the pleura and lungs, but a specific, infectious fever, in which these parts become the seat of *micrococcus growth* and inflammation—a veritable *lung plague*, a *lungenseuche*, as the Germans call it. In representing it as simple pleuro-pneumonia, the political doctors are merely raising a man of straw.

2d. *Has it not long been held by scientific physicians that croupous or lobular pneumonia in man has all the characters of a specific and contagious disease; its propagation in localities and families, its tendency to affect common and successive occupants of the same bed (Russell, United States Sanitary Commission Memoirs)? Have they never heard of the advocacy of the infectious nature of pneumonia by Jurgensen, Sturges, Cohnheim, Heidenhain, Sommerbrodt, Schuppel, Klebs, and others among the most eminent of recent observers?*

3d. Have they never heard the black death of the middle ages attributed to an epidemic of pneumonia?

4th. Have they never heard of Dr. Dawson's observations on

an epidemic of contagious pneumonia in Canada and the United States ?

5th. Have they never heard of the pneumococcus germ of Friedlander found constant in the recent croupous pneumonia of man and investigated by Dr. Sternberg, of the United States army ?

Manifestly, Drs. Swinburne and Gallinger have been oblivious to the medical progress of the last century, and have just awoken from a Rip Van Winkle sleep.

It may be objected that the micrococcus of Friedlander has not been inoculated experimentally from man to man. This must be allowed. The sacredness of human life forbids. But this is just where the despised veterinarians occupy a vantage ground over the physicians of man and have largely availed of it, and more than anywhere else in this very lung plague or contagious pleuropneumonia of cattle which has so disturbed our two self-constituted political scientists.

As early as 1852, Willems and Van Kempen, of Hasselt, Belgium, demonstrated the micrococcus of lung plague, and inoculated it on cattle, thereby conferring an immunity from subsequent attacks of the disease. Since that time it has been practiced on many hundreds of thousands of cattle in all parts of the world into which the disease has been carried and implanted by trade, and thus a demonstration has been given as to the specific and contagious nature of the disease, which cannot be claimed for any specific disease of man. It had long been known that one attack of this disease protected the system from a second attack on a subsequent exposure, and now we have as ample evidence that a mild attack produced by inoculation is as surely protective as is the disease contracted in the ordinary way, or as is the vaccinated person protected against small-pox. Can anything be conceived of that will speak more forcibly as to the specific and contagious nature of this disease ?

Cultures of the micrococcus have been made in artificial media, but any evidence from that source would be superfluous.

I would add a word as to the unmerited slanders thrown by these doctors on the veterinarians. Had they kept abreast of

current *medical* knowledge they would have found no occasion for the slanders in question. They would have found the veterinarian Henri Bouley sitting as the honored President of the Academie des Sciences, at Paris; they would have found Chauveau, of Lyons, contributing more than any other single man to demonstrate that contagion is dependent on living organized particles, which can be filtered from a virus, and will then leave the liquid non-infecting; they would have found Toussaint and Gerlach, now gone to their reward, heroically demonstrating the transmission of tuberculosis by flesh, milk and other materials, and laying broad and sound foundations for the restriction of this "white plague of the north;" they would have found Bollinger demonstrating the existence of actinomycosis in animals, and tracing its connection with the same deadly disease in man; they would have found Arloing tracing the difference between the bacillar anthrax, deadly to man and beast, and the vibrionic anthrax from which man is exempt; they would have found a host of others elucidating the different phases of the life history of the germs of the different infectious diseases of the lower animals and of man, and placing sanitary medicine on a solid basis, of which our two political doctors evidently have not the remotest conception. They would have found, even in America, that the despised veterinarian has made advances of the most substantial kind in regard to the contagious diseases of fowl cholera, swine plague, and that even in the case of the lung plague itself he had devised a mode of giving immunity to cattle exposed to infection without the dangerous resort of inoculating the disease germ itself. If they had taken the trouble to inquire, they would have found that numbers of the most eminent members of the medical profession in New York and Brooklyn had personally investigated the work of the veterinarians in that city in 1879-80, had abundantly satisfied themselves as to the nature of the disease and of the effectiveness of the work then accomplished. Whenever a physician inclined to assume the position now taken by Drs. Swinburne and Gallinger it was only necessary to secure his attendance at the cow-stables and the post-mortems in order to convert him thoroughly from his skepticism. Our detractors would further find, if they were

to place themselves *en rapport* with medical literature, that the veterinarians are not the professional outcasts they would fain make out, but that they are to be found as honored members of the American Public Health Association, placed on important committees, and treated there and in our medical journals and publications with the courtesy due to valued co-workers in a common field.

When medical men affect to despise the educated veterinarian we may rest assured that they are themselves little worthy of the title of physician. It is true that there are many uneducated men practicing on animals, and that this State has just legalized as veterinary practitioners all who have been prescribing for animals for three years past. These we do not claim to be worthy of trust as veterinarians. Nor would we make such claim for many others who have spent two winters at a veterinary college and then gone forth with a degree. But no more would we pin our faith to our medical practitioners legalized under similar laws, nor to those who have taken a degree, as many have done in our medical schools, after an attendance of two winter sessions. We have educated veterinarians as we have educated physicians, and we have legalized quacks in both professions. I would as little claim reliability for the veterinary quack as would modern scientific physicians claim reliability for doctors Swinburne and Gallinger after the recent reckless exposure of their medical ignorance on the floor of the House. It may enlighten our political doctors and others to tell what the curriculum of an approved veterinary college is to-day. I take the French colleges as examples. To enter one of these the candidate must be a bachelor *es lettres* or *es sciences*, a prerequisite that our American medical colleges generally dispense with. Then follows a four years' course of professional studies, extended over summer and winter alike. It embraces physics, chemistry (practical, general, analytical, physiological and pathological), botany, zoology, anatomy (descriptive, practical, general and regional), exterior (form), data for ascertaining the age, forge, French, German, fencing, microscopy, physiology, teratology, materia medica, therapeutics, pharmacy, geology, mineralogy, clinics, general

pathology, internal pathology, external pathology, hygiene, contagious diseases and sanitary police, inspection of meats, commercial jurisprudence and legal medicine, preventive inoculations, surgical pathology, surgical and topographical anatomy, obstetrics, surgical operations, general zootechny, special zootechny, agriculture, equitation.

Do our American medical schools exceed this in time or range? The veterinarian has more need of a thorough training than the physician. He deals with not one genus, but with half a dozen, differing widely in structure, functions, habits and diseases. He cannot avail of the subjective feelings and intelligence of his dumb patient, but must be skillful enough to reach a sound diagnosis by objective signs. He can learn nothing as to early symptoms nor probable causes by interrogations, but must exercise a more careful physical examination and must have his mind more alert to probable harmful antecedents. And why should this skill as applied to the beast be less reliable or less estimable than when similar skill is exerted on man? The habit of relying on objective symptoms alone gives the veterinarian the better training, and if he has the requisite education and natural ability serves to render his observation more acute, just as the blind man concentrating his whole mind on the senses of hearing and feeling acquires an extraordinary delicacy in these senses.

Now I inquire, Had Drs. Swinburne and Gallinger any such preparation for their medical practice as these students get for their veterinary? If they had, they must have made a wofully poor use of their opportunities from present appearances.

Once more: Dr. Gallinger attributes lung plague, small-pox, etc., to filth, privations of travel, etc. It puzzles me to conceive of where he can have obtained his alleged medical education. Surely no educated medical man of to-day makes such atrocious blunders. Small-pox was unknown in Europe till the sixth century. Have Europe and America descended to an abyss of filth unknown till that time, save among the people of Egypt and the East, where small-pox previously prevailed? A few years ago small-pox was still unknown in Australia and Tasmania. Has there been no filth in the emigrant vessels, in the huts at the

“diggings,” or in the blackfellows’ dens? If there is one fact held more strongly than another by the medical men of to-day, it is that *they know small-pox only as the result of contagion.*

His selection of lung plague is equally unfortunate. If he had looked into my monograph on “lung plague” he would have found that in dealing with the disease in New York and Brooklyn we found no cases *in the crowded stock yards* among the steers that had traveled from the West and endured all the privations of a railway journey of 1,000 miles and upwards under the broiling sun of July or in the chill colds of December. It was found in the dairy cows of the city, recruited largely from the same State, and even in these it did not appear till they had passed a period of several weeks in the city cow-sheds or in the suburban pastures. The privations of their short journey had long passed and their effects ceased, and there had been a long incubation of the germ taken in after their arrival before they showed any symptoms of lung plague. He would have found from the same monograph that the period of the greatest prevalence of the disease was not in winter nor spring, when the cows had long been confined to their filthy cow-sheds and denied contact with neighboring herds, but in the late summer and autumn, after they had been ranging the unfenced pastures all the summer and mingling with other herds and giving and receiving infection.

If he had read the report of the Treasury Cattle Commission, published in 1882, he would have found that in the previous year we examined the herds in the great Western cities, and though we found close cow-houses and filth that exceeded even those of New York and Brooklyn, we could find no trace of lung plague. It is only after the importation into the Mississippi Valley of the infected Jersey cows from Maryland in the year 1883, that any trace of lung plague has been discovered west of the Alleghenies. The filth theory and its author are therefore directly contradicted by the facts of the case.

If Drs. Swinburne and Gallinger will take the first report of the Treasury Cattle Commission (1882), they will find all the evidence necessary from the history of this disease in the old world

and the new, that this plague is only known as communicated by contagion ; that all countries out of its primary habitat and that have never imported it, remain free from it to the present date ; that all fenced countries that have unfortunately imported it, but have systematically set about extirpating it and persisted intelligently, have succeeded ; that unfenced countries, when infected, have maintained the infection in spite of all human efforts ; that countries out of the line of traffic from infected places (as those in Northwestern and Southwestern Europe), have kept clear of the infection ; and that in spite of a constant open-air life in regions of perpetual summer, the herds of South Africa and Australia, mingling on limitless unfenced ranges, have, since the introduction of the plague, been cut down in greater numbers than even in Europe, and that in both regions the colonists, in self-defence, are largely exchanging cattle for sheep. They will find all they can reasonably ask for in that small report—incomparably more than the three proposed experts could possibly attain to in several generations of observation on the disease as seen in America only.

A few years ago Congress created a Treasury Cattle Commission, and instructed it to investigate and report, which it promptly and faithfully did, leaving in the first year half its appropriation unused. The two following years the reports made were extremely short, as far more than the available funds were demanded for the establishment of quarantine stations at four of our Eastern ports. Then Congress created the Bureau of Animal Industry, and the Commission willingly resigned its duties into the hands of that Bureau. In the reports of our Commission, in those of the Department of Agriculture, and in those of the Bureau of Animal Industry, there is the amplest fund of information on this lung plague to which the Congressmen may resort without going outside and scanning the whole libraries that have been written on the subject.

It is the absolute duty of every Congressman to acquaint himself with these Congressional documents as the basis of future legislation. We pay our Congressmen handsomely to attend to the needs of the country, and they are recreant to their high trust

when, as in this instance, they proceed to vote upon a subject so important, a subject fundamental to the prosperity of our agriculture, without once glancing at the merits of the case as shown in the documents furnished to their hand, and which their own body had called for. The present ignorance of Congressmen is an unanswerable impeachment of them as derelict of their high trust, and if this plague should, by reason of their neglect, evade the quarantine at Chicago and the lack of quarantine in the East, and escape to our plains and permanently establish itself there, on these neglectful Congressmen will rest the responsibility. Their demand for a new investigation and report is all a delusion. If they cannot find time to open the report lying under their hand of the disastrous history of this plague in past centuries, and of its recent history in our midst, much less will they find time to look into the matter when another document has been added to the list. The only result of such legislation will be the delay of all active suppressive measures for another year at least, when a new Congress may demand the appointment of a new commission of their own creation as more trustworthy than that which is to be appointed this year. The true instigators of all this folly will, however, have attained their end; no man shall interfere with them in turning over so many hundreds or thousands of cattle (sick or well) per day, and pocketing a handsome return for the privilege. No man shall hinder them from receiving cattle from an infected herd and selling the same to go into districts where the disease is unknown and where the cattle industry is the predominant one. What matters it to them if the lung plague has gained a footing in the Mississippi Valley? What would it matter to them if it were planted permanently on our Western ranges? What if it had permeated and corrupted every stream of cattle trade in the country? The loss would not be theirs. They would still draw their commissions on their sales. And the unlucky stock-owner who discovered that he had just purchased an infected lot would too often hurry off the apparently healthy to market anew, to be resold to another unwary purchaser, to spread the disease to a fresh centre, but also to furnish an additional commission to the dealer. Thus the more

widely the infection is spread the more numerous will be the sales and the higher will be the income of the commission dealer. Let his hoodwinked victims look to their own interests. Why should he sacrifice his private interests for theirs, or for any future good of the country at large?

The Chicago *Breeder's Gazette* of Feb. 3, 1887, publishes what purports to be a letter of Dr. Gallinger, of the date of Jan. 17, 1887, in which he assures one of his constituents that he will do everything in his power for the passage of the pleuro-pneumonia bill. It is now in order for Dr. Gallinger to deny the authenticity of this letter, or to explain its contents in view of the absolutely contradictory position which he assumed when the bill came up for consideration. We are anxious to hear what were the considerations which led Dr. Gallinger to so suddenly and completely change his purpose. As we have already seen, it could neither have been the study of recent medical lore, nor of any published report nor treatise on the lung plague. What, then, persuaded him to change?

But, finally, our political physicians are morbidly sensitive as to the outlay of any public money which has once found its way into the federal treasury. They will much rather lose \$5,000,000 next year than appropriate \$50,000 to stop the leak. Very well! Such careful guardians of the people's money cannot hesitate to accept the following proposition:

Challenge.—Let Drs. Swinburne and Gallinger, the Commissioner of Agriculture and the Chief of the Bureau of Animal Industry (the three expert (?) Commissioners may be added if they should be appointed), select one dozen cattle in a pure elevated country district, outside the area of any lung plague, have them removed with all due precautions to the experimental farm of the Department of Agriculture or other approved place, have them inoculated behind the elbow with the liquid exudate of the diseased lung from a well-developed case of lung plague to be selected by the Chief of the Bureau of Animal Industry, with or without the assistance of other veterinarians, and await the result. If in the course of twenty-five days a proportion of these animals show the specific infective inflammation extending subcutaneously

from the seat of inoculation, then Drs. Swinburne and Gallinger shall forfeit their respective salaries as Congressmen for the current year, the same to be applied, with whatever fund may be appropriated by Congress, for the costs of the experiment and for the stamping out of the contagious lung plague of cattle.

As they hold themselves superior to any need of studying reports and treatises on the subject, as the past history of the plague has no meaning for them, as their convictions are so strong that they hesitate not to discard and defy medical and veterinary literature alike, and as they rejoice in being able to leave the country to a present yearly loss of \$5,000,000, and a prospective yearly loss of \$50,000,000 by reason of what they hold to be a delusion, they will doubtless be delighted to contribute this paltry sum for the public good and as some atonement for the evil they have committed, in case it shall be shown that after all they are not the exclusive custodians of all medical and veterinary knowledge. Men so willing to risk the great live-stock interest should be willing to risk their salaries.

I would suggest further that if the 114 Congressmen who willfully rejected the knowledge placed under their hands and followed the two doctors in their evil course will similarly stake their yearly salaries from the Government on this issue, we will ask no further appropriation for next year for the work of stamping out this lung plague. In neglecting to study the Congressional reports made for their guidance, these men have been guilty of a gross failure in their duty; in casting their votes as they did in the face of the danger of impending calamity, they have incurred a fearful responsibility. Now let them be magnanimous and stake their salaries on the correctness of their position, and the outcome cannot fail to be a good one. If it shall be proven that we have no lung plague on this continent, the appropriation will be saved; but if it shall turn out that we have, then the fund provided by their salaries will be at once available for its extinction, and they will have the patriotic comfort that it will not prove an extra tax upon an already heavily taxed and long-suffering people.

THE LATEST CONTRIBUTION TO THE ETIOLOGY OF THE GERMAN SWINE PLAGUE AND SIMILAR DISEASES.

From an Article in the Berliner Klinische Wochenschrift, 1886, Nos. 44, 45, 46, Entitled "Ueber die Wildseuche und ihre Bedeutung für die Nationalökonomie und Hygiene," critically considered

BY DR. BILLINGS.*

(Prepared especially for the American Veterinary Review.)

Although we cannot by any means accept all of Dr. Hueppe's conclusions as to the identity of the diseases which he groups together under the name of "*Septicæmia hæmorrhagica*," still his exhaustive communication upon the subject should not be overlooked, especially as it has such an important bearing upon the diseases of our domestic animals, those of swine in particular. Instead of simplifying matters this communication rather tends to increase their complexity and opens to American investigators several very important questions. By "Wildseuche," in the sense the word is used, is meant a disease attacking animals of the deer species; as we have no extensive deer parks in this country it will be a hard matter to decide that question here, or contribute anything new to it. As the same disease has also been shown to attack the domestic animals we have to decide, however—

1st. Have we this disease among our domestic animals, and which?

2d. Is it identical with our "hog cholera," or better, that form of "hog cholera" which corresponds in its microscopic lesions, to Klein's "Pneummoenteritis," which is the "Swine Plague" of Delmers, Salmon and myself.

3d. Is this American swine plague identical with Schutz's "Schweineseuche?" (I consider it is at present.)

As will be seen, Huppe claims that there is no essential difference between the germs of Schutz's "Schweineseuche," "hen-cholera" and this "Wildseuche," either in their morphological or biological phenomena, which I do not think he has proven by any means. The readers of my communication (made through my

*This paper was prepared November last, and as will be seen, does not fully agree with my conclusions in my paper on the "Etiological Moment in Swine Plague," published later.

assistant Dr. Bowhill) upon my investigations upon swine plague in Nebraska will remember that I have been very cautious about claiming identity between that disease and Schutz's "Schweineseuche," even though I can find no morpho- or biological differentiation between his micro-organism and that discovered by me. That the latter is the true micro-organism of this one species of hog cholera has been proven so conclusively by numerous experiments as to place that question beyond all doubt. With regard to the American disease I can only say at present that so far as my investigations have extended I have never missed more or less extensive pulmonary lesions, and that I have seen numerous cases, in the field especially, in which ulcerative alone, or the peculiar ulcerative-neoplastic circumscribed-indurative lesions were entirely wanting in the large intestine; though the mucosa was by no means free from irritative complications.

There is no doubt that Hueppe is correct in assuming that we have in these various diseases a group, the etiological movements of which bear the closest relation to one another, but the micrococcus of hen cholera is, morphologically at least (according to all descriptions but Huppe's), quite a distinct organism from that of rabbit septicæmia as is that of our swine plague from the latter; the uncolored space in the bacterium of American swine plague is more extensive than in the bacteria of rabbit septicæmia, and more distinctly marked. There is no reason why two similarly appearing or even biologically developing micro-organisms should not have entirely different pathogenic action. In such cases they can only be distinguished by the disease produced. Now hen cholera will not produce hog cholera, that is, the real swine plague if feeding experiments can be depended upon. There is no evidence, that I know of, of inoculative experiments; hence Hueppe's assertions on that question fall to the ground.

The same is true with regard to swine plague producing hen cholera, so far as I can judge from the experiments of others.

To my mind this question of the identity of bacteria, or the identical etiological connection between them, is not to be decided upon morphological or biological data, but rather by their pathogenic activities entirely. The facts which should decide such a question are:

1st. The infectious principle or principles produced by the bacteria.

2d. The susceptibility of specific species of animal life to such ptomains.

It is in reality this latter factum which decides the specific etiological nature of any bacterium with regard to disease, and not its extra organismal micro- or biological phenomena. These remarks will have to serve as an introduction to Hueppe's paper, selections from which will follow below.

“Under the designation of ‘new pest among deer and cattle’ (Eine neue Wild and Rinde seuche), Bollinger was the first to describe an infectious epidemic disease which caused much devastation among the deer in the parks around Munich in the year 1878, in which there died 387 common deer, 234 wild swine and 153 elk. The disease extended to the cattle in the neighborhood and caused more or less devastation. Bollinger was successful in tracing these outbreaks to a common cause.

“Pletcher described outbreaks of a similar character in succeeding years, in which the domestic animals were sometimes affected and the wild ones not attacked, and vice versa. Friedberger and Hahn caused the disease in horses and swine by inoculation. Bollinger was also successful in conveying it to goats and sheep, while Frank received only negative results in sheep. Bollinger laid especial emphasis upon the susceptibility of rabbits to inoculation, and that they died in six to eight hours.*

“According to the clinical and microscopical phenomena, two different forms were distinguished by Bollinger; the one being an exanthematous, the other a pectoral variety, which he looked upon as different localizations in the organisms of one and the same cause.

“Notwithstanding the strong resemblance which the disease bears to anthrax, its absolute differentiation from that disease was demonstrated by Bollinger by the invariable absence of the characteristic ‘bacillus anthracis.’

“Prof. Kitt, of the Munich Veterinary School, was the first

* The bacterium of swine plague, either the American or Schütz's, does not kill rabbits in any such short period post inoculationis.—B.

to demonstrate the presence of a specific micro-organism in this disease by means of isolation and cultivation experiments and animal experimentation.

“He looked upon this organism as resembling, but not identical with that of rabbit septicæmia, hen cholera and schweineseuche.*

“Kitt succeeded in inoculating pigeons and rabbits with this organism, but received negative results with guinea pigs, rats and hens. He calls attention to the regular appearance of a hæmorrhagic tracheitis in rabbits on inoculation.”

The investigations of Dr. Hueppe were made with blood sent to him, under every precaution, by Prof. Kitt. This blood was sowed upon gelatine plates, from the cultures of which numerous animals were inoculated; in other cases animals were directly inoculated with the blood, and after carrying it through a series of animals pure cultivations of the micro-organism were also obtained.

In both the exanthematous and pectoral form (Bollinger) a hæmorrhagic enteritis was almost always present, as well as hæmorrhages in different organs.†

“In the exanthematous form, which has a strong resemblance to carbuncular anthrax in cattle, there was observed a severe and extensive inflammatory œdema of the skin, which became hard as a board in from six to twelve hours, as well as œdema of the externally situated soft tissues of a more or less hæmorrhagic character. When the head was affected it became very much swollen and misshapen and the visible mucosæ were cyanotic and the seat of numerous hæmorrhagic infiltrations.

“Experimentation demonstrated that the natural eruption of the exanthematous form must be due to infection through accidental wounds in the skin of animals by the presence of the in-

* As Kitt's experiments were published in 1885, and as Schutz was the first to prove a specific bacterium in schweineseuche, though Lœfler had anticipated him somewhat, but without sufficient proof, and as neither Kitt or any one else had until then proven the pathogenic activity of the bacterium seen by Schutz in schweineseuche with certainty, I cannot see how Hueppe is justified in making the above assertion.—B.

† Only occasional in swine plague; at least not general.—B.

fecting organism in the earth, mud, water or dust of their grazing places. It is a fact that this exanthematous or cutaneous form occurs as a purely contagious disease and is transmitted from animal to animal.”*

“This infection, by means of cutaneous wounds, leads to a direct infection of the blood and to a rapidly fatal septicæmia.”†

* I doubt that statement. There is no evidence that the disease in question is a contagious disease, in the strict sense of the term, in any of the descriptions of its clinical course, while there is every evidence that it is a purely infectious disease. Its attacking a very large number of animals in the same herd at the same time does not make it a contagious disease, but rather points to the presence of a common cause, and similar susceptible conditions in the animals, (wounds, etc.), nor does it exclude the possibility of flies, etc., playing an active role in its extension, as in anthrax. It is time that investigators began to have some idea of the philosophical-pathological use of medical technology.

The disease discussed by Hueppe is one bound on locality, and peculiar telluric and climatic conditions in said localities. It never develops primarily in an animal organism, but such animals become infected when in infected localities. This is certainly not the essential nature of a contagious disease, which is one in which the contagious or infecting principle, so far as we now know, invariably has its proto-origin in the organism of some given species of animal life, and never outside of it. Etiologically speaking a contagious disease is one in which the development of the infection is invariably intro-organismal and never extra-organismal; though it may retain its vitality, or perhaps proliferate under favorable conditions, outside of any animal organism, but it never originates there.

This “Wildseuche,” like anthrax, is in reality an extra organismal disease with regard to its etiology. That infected animals can and do offer a favorable locality for the intro-organismal development of the germs, or that by means of some object, such as flies or their offal, can and do cause other animals to become infected, does not constitute such diseases as contagious. Animals with no abrasions, with every possibility avoided of the conveyance of the disease from a diseased one by flies, insects, etc., can stand side by side in the same stable with diseased ones and breathe the same air and have very much contact, with due precaution as to feed troughs, water buckets, etc., on the part of the attendants, and never be exposed to the least danger of infection.

Susceptible animals cannot do this in glanders, pleuro-pneumonia, rinderpest and such diseases; nor would healthy dogs be endangered, under due precaution, were any number of rabid dogs caged in a kennel so that they could not possibly come in contact with them.—B.

† Swine plague is not so rapidly fatal by any means. Detmer’s places the average period at about seven days, while I am at present inclined to extend it to from ten to fourteen days. The question is not so simple, as the virulent activity of the same germ undoubtedly varies in different years and in different localities.—B.

“The exanthematous form is by no means so frequent, under natural conditions, as the pectoral, and the pathological phenomena go to show that the disease should be generally designated as an ‘*infectious pneumonia*.’”*

“As a rule we generally observe the presence of a fibrinous pleuro-pneumonia (frequently combined with pericarditis and mediastinitis) in varied degree and intensity; often terminating in well developed gangrenous pneumonia. The pectoral form is less acute than the exanthematous, frequently requiring six days before terminating fatally; sometimes it takes on a chronic course. This different deportment of one and the same virus can only be explained by the different ostia through which it gains access to the body; that is, whether by means of the external wounds, or the respiratory tract, or as to whether a greater or less quantity is taken in exclusively by the lungs, or if the same is swallowed with the saliva and thus gains access to the intestines. The fact that we find intestinal complications in this disease leads me to add an *intestinal variety* to those already mentioned, which has already been done by Kitt, who says: ‘The primary generation of this disease is far more liable to be due to the reception of the infectious elements in the intestinal canal, which causes a *mycosis-intestinalis*, than by means of flies, etc.’

“I think that Kitt undervalues the possibility of infection by means of the respiratory tract. Bollinger had previously succeeded in producing a fatally pectoral form which ended in fifty-four hours, by feeding a steer with the contents of the markedly inflamed intestine of a calf that perished from the exanthematous variety. On the other hand, Bollinger also produced the erysipulatus form by inoculating a cow and a hog with the heart’s blood of a calf that had just died of the pectoral variety. The hog had at the same time a fibrinous pleuritis in the initial stage, and the cow a hæmorrhagic gastro-enteritis.

*Here Hueppe contradicts his previous assertion that the disease is “contagious.” While everybody knows that all contagious diseases must of necessity be due to an infecting principle, yet no one would dare claim that peculiar clinical forms of one and the same disease, due to one and the same cause, can be infectious in the one case and contagious in the other, as Heuppe does in this case.—B.

“It appears to me necessary to call attention to the fact that the virus seems to have a predilection for the lungs in both cattle and swine, so that the existence of the pectoral form does not necessitate the assumption of the direct inspiration of the inficiens into the respiratory tract. Severe affection of the intestinal tract is not only possible by the direct introduction of the inficiens into the intestines, but the hæmorrhagic enteritis can also occur as a secondary lesion. Bollinger appears to me to have gone too far in assuming a special pectoral form, and the individual cases of gastro-enteritis as something of secondary importance, while Kitt has made a mistake in a contrary direction.

“I think it a matter of especial importance to call attention to the different deportment of swine in comparison with cattle in this disease. While cattle are very susceptible and soon succumb to the disease, whether the inficiens gain access to their organism by means of cutaneous wounds, by the respiratory tract, or by being fed with infectious material, swine have until now only become infected by means of sub-cutaneous inoculation, or through the introduction of the inficiens into the lungs, but not through the intestines. Caseous disturbances in the intestines of swine must, nevertheless, be looked upon as chronic intestinal lesions of the “Wildseuche.”*

“Inoculation experiments upon horses have thus far led to the pure septic variety only. Kitt reports that, aside from an inflammatory hæmorrhagic œdema at the locus inoculationis, he has observed ecchymoses in internal organs and hypostatic pneumonia.”†

“The susceptibility of horses for this virus renders it very probable that the disease described by Schutz is ‘*genuine equine pneumonia*,’ which strongly resembles the ‘Wildseuche’ pneumonia of swine—anatomically—is simply *the pectoral form of this disease in the horse*.”

* Such an assumption is by all means of too general a character.—B.

† This can be equally well seen in cases of septicæmia of traumatic origin in man or animals, especially in protracted and severely fatal cases of septic metritis, where quite another organism plays the etiological role.—B.

One wonders what Schutz will have to say to such generalization as the above. It certainly shows the caution which medical men should exercise—but which Hueppe certainly has not—when they come to consider animal diseases. There is no relation whatever between these two complications in their anatomical lesions, except that pneumonia exists in both, nor in their clinical course.—B.

“While swine seem to possess a high degree of susceptibility to the reception of the virus of this disease by the lungs and cutaneous wounds, the question of intestinal infection needs further consideration. The hæmorrhagic enteritis, which is an almost constant occurrence, and the singular resemblance of the cutaneous complications in this disease to those of anthrax, sufficiently demonstrate why it should have been mistaken for that disease in the past and the urgent necessity of its requiring consideration from the hygienic point of view.

“Bravell and others have shown that some breeds of swine are not susceptible to the action of the purest cultivations of anthrax. These experiments do not, however, warrant the conclusion that all swine are not susceptible to anthrax. Breeds of swine that possess this peculiar non-receptivity towards anthrax, have no immunity to the ‘wildseuche.’ The swine of the Bavarian mountains are especially susceptible to this disease, which has undoubtedly led to many mistaken assertions as to the frequency of anthrax in these animals.”

“The deportment of sheep to this pest is quite the contrary, as they have very little susceptibility to the ‘wildseuche.’ The susceptibility of the different breeds of sheep remains, however, a matter for future investigation.

“Experience has shown that rabbits are particularly useful for the experimental study of this disease. As already mentioned, Bollinger caused these animals to die in 6 to 8 hours; my investigations have resulted in causing death in from 12 hours, as the minimum, to 36 as the extreme duration; as a rule, the time elapsed is from 15 to 20 hours. When inoculated in the ear, the locus inoculationis soon becomes hot, swollen and œdematous. Especial typical symptoms are wanting, the phenomena being

those of severe general infection. The autopsy reveals the presence of an œdematous infiltrated condition of many parts of the subcutis, in which the bacteria are plentifully represented; ecchymoses are frequent in the sub-cutis of the neck and breast; cervical lymph-glands swollen, hard, and greyish-red on section. The respiratory tubes filled with a delicate reddish foam; the mucosa of the larynx, trachea and large bronchial interspersed with numerous ecchymotic and striated hæmorrhages; the lung very red, sometimes diffuse, and at other times circumscribed in characters, but without local pneumonia centres, as were seen in other animals. Kitt reports lobular pneumonia in one case. Pleural cavity did not contain any effusion; isolated ecchymoses were distributed over the various extensions of the pleura. As in the larger animals, the spleen is not much swollen, as a rule; it is of a brown or blue-red color, and sometimes shows ecchymoses in the capsule. Liver and kidneys were often apparently unchanged, while in other animals the parenchyma was somewhat clouded and small ecchymoses were to be seen under the capsule. The gastric and intestinal mucosa is generally much swollen, with occasional ecchymoses here and there, especially in the posterior intestine."

"Rabbits do not invariably succumb to the inoculation. In such cases they do not seem to acquire any immunity, as the same animals have succumbed to a second inoculation after a due time has elapsed. The manner in which the animals have been artificially infected does not seem to exert any influence upon the severity of the tracheitis, or the gastro-enteritis. Pneumonia does not occur in rabbits after aspiration experiments with any such constancy as in cattle and swine after subcutaneous inoculation; local subcutaneous œdema is, however, a constant occurrence in all inoculated animals. Inoculations in white mice give the picture of a general septicæmia, but nothing especially characteristic. Kitt reports that in five pigeons which died from inoculation he observed hæmorrhagic infiltration of the subcutaneous tissue at the point injected, and fatty degeneration and necrosis of the muscle tissue of the same character as in hen cholera."

This condition does not show that the diseases are the same,

by any means, only that another micro-organism can produce similar local lesions to those produced by that of hen cholera.

The above assertion of mine is still more strengthened by the fact that Kitt received negative results from inoculations in hens and rabbits, though the number used was small.—B.

“The experimental study of this disease shows that the named species—cattle, horses, wild and tame swine, goats, rabbits, mice, pigeons and some small birds—are susceptible to the disease by some form of infection, while sheep and guinea-pigs are more or less immune. The experiments on hens have not been numerous enough to be considered satisfactory on this head. It is a matter of practical importance to notice that this disease is fatal to the same species of animals. They are, in general, susceptible to anthrax, the most important variation in this direction being the susceptibility of swine to the ‘wildseuche,’ while sheep do not appear to be so. This fact—that is, the susceptibility of these animals to this disease—requires consideration in connection with the question of producing artificial immunity towards anthrax by inoculation, as such inoculated animals might die from the ‘wildseuche,’ and the disease still be mistaken for anthrax.

“It has already been mentioned that Kitt was the first to demonstrate the presence of a specific micro-organism in this disease. They are very plentiful in the blood, and are easily colored by aqueous solutions of fuchsin, methyl-violet, methylen-blue, and vesuvin. Alkaline solutions of methylen-blue and fuchsin seem to color this organism the most satisfactorily in tissues. They may be demonstrated in the blood both by microscopical examination and cultures several hours before the death of the animal.

“The greater number appear as short elongated bodies—bacteria—twice as long as wide, with distinctly-marked ends and a clear middle section; four of them in connection correspond to the transverse diameter of a red blood cell.”

According to Hueppe, this description corresponds nearly enough to warrant his conclusions, to the appearance and staining reaction of the bacteria of the German “schweineseuche” and hen cholera. I have in my possession a bacterium derived

from the peculiar outbreak in cattle at Crete, which everything but experimental evidence goes to show must be etiologically connected with that disease. The experimental evidence, *pro.* or *con.*, has not been furnished, simply because of the means to do the work with, as well as to fulfill the precautions necessary to do it safely. This organism also corresponds nearly enough to the above description, except that it does not color well in the blue tinctures and does in fuchsin. Its development on gelatine is not that of the swine-plague bacterium, however; it is decidedly aerobic, and scarcely follows the line of puncture into the body of the gelatine at all, but spreads out over the superficial surface. It does not cause it to fructify. Its manner of proliferation is the same as that of the swine-plague organism; it belongs to the same group.

Now, no matter what this disease really was, the animals were *wild* enough, in an English sense of the word, but there was not a single pathological condition of a septic character; as can be seen by the autopsies lately reported in the REVIEW, it certainly was not the German "wildseuche"; yet, according to Hueppe's reasoning, it should be, because of the morpho- and biological similarities of the organism in question to that described by him. According to all other observers, there is not the close resemblance in the organism of hen cholera to that described by Hueppe, which he claims for it, but in this regard I am willing to make some allowance for improved microscopes and methods, as I have no specimens of the hen-cholera organism with me.

It is certainly clear that Hueppe has described another organism belonging to the same group as those of swine-plague, and bearing the closest resemblance to those of that disease, but, as I have previously said, neither he nor any one else can assert that it is the same. The typical lesions of swine plague must be produced in swine with it by inoculation to prove that point. It would be no proof to carry the micro-organism of swine-plague through all these animals and produce even fatal results, and then back to swine. That would only prove that they were susceptible to artificial inoculation. To be the same and identical organism, it must occur in such animals under natural conditions,

and then be equal to producing the typical lesions of swine plague in the majority of the swine inoculated.

The lesions of swine plague, as we see it in this country, in the large intestine, are so specifically striking that did they occur in Germany it is singular that none of their investigators mention them. In this regard I desire especially to call attention to one statement of Hueppe's (on another page), which is so different from anything Schutz has mentioned that it is worthy of notice. He says: "*The caseous process which one sometimes sees in the intestines of swine are to be looked upon as a chronic intestinal form of swine-plague.*" In the American disease the caseous products are particularly characteristic of the acute ulcerative stage, while the indurative-neoplastic radial productions follow on them (the caseous mass having been exfoliated), and are not only indicative of a chronic process, but of an attempt at healing. It is this peculiar condition, which Detmers mistakenly calls "swine-plague tumors," which no German writer mentions. See my article on the Etiology of Swine-Plague.—B.

Hueppe's description of the development and different biological stages of this organism correspond exactly with those I have given for that of swine-plague.

Having given the above description of the mature organism, he says: "*I look upon the vegetative forms of this organism in cultures and in the blood as resembling cocci, according to the stage of development.* (And I should say the view one gets of them; that is, whether they present a side or end view.—B.) *They present themselves to the eye as round or slightly elongated ellipsoid bodies, which take the coloring material up in all parts of the body.*"

"This form soon extends itself to a shorter or longer object with markedly round ends. The plasma of these short organisms differentiates within the capsule and isolates itself at either pole before fission takes place, while the capsule still retains the form of the short-rod; it finally separates into two young, roundish cells. According to the rapidity of development and the age of the culture, the numerical relations of the different morphological appearances of this organism may vary, sometimes one form

and then another predominating in the cultures. I have seen the short roundish homogeneously coloring rods in the blood of animals. They do not group themselves into chains of zooglea masses. *The vegetative form must be looked upon as the 'coccus form' of this organism, which does not suffer any material change of definition when we now and again find somewhat longer rod-like forms, and we must therefore credit this organism to the species micrococci."*

It so happens that both Hueppe and I are out of the Koch school, though I desire to be known more as a pathologist than bacteriologist, and shall detail the latter work to an assistant as soon as I can. The above passage will undoubtedly give much pleasure to the Chief of the Bureau of Animal Industry. It certainly should, as the language is fully as contradictory and mystifying as his. In the earlier days of bacteriology we described cocci—as double or diplo cocci, and ovoid or oblong, thereby meaning that the object was roundish, and that its longitudinal exceeded its transverse diameter. Then come Koch with his practical classification.

1. Cocci, absolutely round micro-organism.

2. Bacteria, ovoid organisms in which the longitudinal exceeded the transverse diameter.

3. Bacilli—or rods—which require no definition. Now here comes Heuppe, a prolific author and accredited observer, and describes this object in his opening remarks on its morphology as "*Im Blute er schenit ein grosser Theil der Bakterien als Kurzes Stäb chen, welches 2 bis 3 mal langer als breit ist, stark abgerundete Enden*" which literally translated is: In the blood the greater number of the bacteria appear as short rods, which are two to three times longer than wide, with strongly rounded ends. Now how the devil Hueppe or anybody else can transform that into a coccus—or call *a short rod* in one place, and then say that the same object should be classed with the micrococci—"Wir müssen die Bakterien der Gattung *Mikrococcus Zurveisen*" passes the comprehension of any sane mortal who can understand the meaning of words in either English or German. It is an absolute contradiction. A "*stabchen*" is a "*micrococcus*"

and neither Heuppe nor anybody else can make anything out of "Stabchen" but a short rod. Koch's differentiation of the ovoid-short rods from bacilli and cocci was a practical stroke of genius. No power on earth can make a micrococcus out of the object described by Hueppe, as this organism in a mature form. Who ever heard of an embryonal or intermediate condition of development in any organism being selected as the period at which to fix its type? People who have matured and logical reasoning faculties invariably describe the matured organism. The Wiesbaden bacteriologist had better go back to school again and learn the first principles of classification over again. He is not only getting mixed, but is very liable to be the cause of mixing others.

The above represents the essential points which I desire to call the attention of American observers to. In the concluding portion of his communication Hueppe enters into a deep and incongruous discussion as to the evidence of the identity of this bacteria with those of the other diseases mentioned and then ends his paper with a very able discussion of the hygienic treatment of the disease. Those who are interested are therefore referred to the original.

THE "STAMPING OUT" PROCESS, OR INOCULATION FOR THE ARREST OF CONTAGIOUS PLEURO-PNEUMONIA.

BY C. H. SWEETAPPLE, V.S., OSHAWA, CANADA.

We are all aware that knowledge cannot be obtained without toil and application. In our ascent of Mount Parnassus the labor is frequently long and toilsome, but the exercise is pleasant and invigorating to the mind. We should pick our footsteps with care, lest an incautious advance or a hasty step should lead to a stumble, or perhaps to a disastrous fall. As a constant toiler on the ancient mythical hill of knowledge, I have read Prof.

McEachran's letter on contagious pleuro-pneumonia in the January number of your excellent periodical, but must confess that I have made no advance in my ascent from its perusal. The opinions he expresses are given something after the style of the ancient oracles of the Sphinx—he gives very little reasoning, and quotes no authority whatever in support of his views. He says: "Let there be no differences of advice;" "I would say, *stamp it out*—kill and cremate every diseased animal," etc. And of inoculation he says: "Shame, I say, on any member of the profession who would recommend it on this continent," and more in the same strain. Are we all expected to unite in his views, and to swallow them *holus bolus*, simply because they are Prof. McEachran's? Must we altogether ignore the converse side of the question, and are the opinions of men in such high standing in our profession as Dr. Fleming, Prof. Williams, Messrs. Rutherford, Cunningham, and many others of extensive knowledge and experience with the disease, to be set at naught and not be deemed worthy of consideration?

Dr. Fleming says: "The persistency with which the value of inoculation has been ignored in this country would be astonishing, did we not know how stubbornly some people shut their eyes to the light, and close their minds to the reception of facts which are not in harmony with preconceived notions, or are adverse to opinions hastily promulgated and based on very imperfect knowledge." And in a recent editorial in the *Veterinary Journal* he also speaks strongly in its favor, and says that "*the pole axe having failed* thus far, though it has been unsparingly used on healthy as well as diseased cattle, surely the more scientific method applied to the still uncontaminated members of a herd should be tried and fairly judged, while the sick are dealt with by prompt slaughter."

Prof. Williams' views, and his exhaustive article on the disease in his "Principles and Practice of Veterinary Medicine," are no doubt familiar to most of your readers. He also strongly endorses the operation as performed by Mr. Rutherford, of Edinburgh. Mr. Rutherford himself, in a most interesting and instructive paper on "Inoculation as a Prevention of Pleuro-

Pneumonia," which I now have before me, says: "An inoculated animal, healthy at the time of inoculation, cannot possibly communicate pleuro-pneumonia to another one. I have frequently been asked the question, 'Will an inoculated animal contract pleuro-pneumonia?' To such a question, as the result of my experience, I can with confidence reply, *No.*" But he says further, if the operation has been *improperly performed*, and the animal not truly inoculated, it may be ineffectual; but that no animal will contract the disease that, after having been operated upon, has exhibited the characteristic features of inoculation. Mr. Rutherford quotes from a letter he has received from Natal: "It may be interesting for you to know that our colony of Natal has suffered severely from pleuro-pneumonia, or lung sickness, and that the only means of prevention found to be of any use is inoculation." In Australia the operation has been long and successfully practiced, and in a report by Mr. Bruce, chief inspector of stock, New South Wales, he says, "Inoculation is now generally practiced throughout Australia;" and where it has failed, he defines the causes of the failure: First, the cattle being diseased when operated upon; second, the use of improper virus; third, to a wrong mode of operating; fourth, to unfavorable weather. In a later report he impresses on his government the desirability of making inoculation a compulsory measure.

Mr. Cunningham, M.R.C.V.S., in the *Veterinary Journal* for last October, gives a record of a number of outbreaks of the disease successfully combatted by inoculation, and towards the conclusion of his interesting article he says: "Let our students study inoculation; let practitioners all over the country make themselves masters of its details and experts in its practice;" "and when all our veterinary surgeons can perform, and perform rightly, and carry out the process to its conclusion, then let inoculation be made compulsory."

Pleuro-pneumonia contagiosa is a contagious eruptive fever, and the lung changes are the result and a symptomatic feature of the disease, and Nature in her efforts to eliminate the disease from the system throws it off by the lungs. Inoculation means the introduction into the system, through an opening in the skin,

of the specific virus of pleuro-pneumonia, the result being a mild degree of fever with certain phenomena of an eruptive character at the seat of the operation, the occurrence of which, its advocates claim, give exemption from the true disease. Much more could be culled from many authorities, and for an exhaustive article on inoculation I refer your readers to Mr. Rutherford's pamphlet. I have had no personal experience with the disease, and will therefore conclude my extracts in the words of Montaigne: "I have merely made a nosegay of culled flowers, and have added nothing of my own but the thread that binds them."

On the opposite side of the question we have Prof. McEachran's opinion that it is a "damnable practice," and his reasoning as to the carnified lung never becoming sound, and millions of temporarily encysted disease germs being coughed up, to sow the seeds of disease in the future. He surely must be aware that the advocates of inoculation will not inoculate animals that are diseased; all diseased animals are destroyed. And they claim that inoculation produces a mild fever, with an eruption that is localized to the part inoculated, and that the lungs remain sound. It must be conceded that his expression is more forcible than his reasoning.

I will now glance at another aspect of the subject. Will a destruction of every animal that has been in contact with diseased animals, the burning of buildings, fences, bags, blankets, etc., insure destruction of every vestige of the virus? The stamping out process in the outbreak at the quarantine station at Quebec can scarcely be called a success. True, the disease has probably not spread beyond the quarantine station, but herds of valuable cattle have been destroyed again and again, and with each destruction of a herd it was claimed that the disease was obliterated. Is this process of destruction to continue until all the cattle at the station are destroyed? Does this speak strongly in favor of the stamping out process? And such a condition of complete isolation can scarcely exist in the country at large—certainly not before the discovery of the disease.

There are many of those of the highest standing in our profession who have confidence that by a searching and careful

investigation and destruction of all diseased animals, with inoculation of all those in health, an outbreak of pleuro-pneumonia may be arrested at once. And very many instances are recorded in support of this opinion. The danger we are menaced with is certainly a grave one, and calls for a sound policy and vigorous action. "Be sure you are right, then go ahead," is a good motto.

The slaughter of whole herds of cattle, and everything that they may possibly have come in contact with or have been in proximity to, is a costly process, and we cannot tell how far it may have to extend. It is also impossible to be certain that none of the virus has escaped beyond our knowledge. In the spring of 1884 the stamping out process was advocated for the outbreak of ergotism in Kansas, Missouri, etc., and thousands of dollars were voted, I believe by the Kansas Legislature, to be appropriated for the wholesale destruction of cattle, buildings, fences, etc., under the erroneous idea that it was a contagious disease. But better counsels prevailed; the disease died out with the spring's change of food from the ergotted hay to wholesome pasturage, and the stamping out process in that instance became the laughing stock of the country, and for its advocates a tumble on the Parnassian Hill, from unsound footing. Is it not well to look at both sides of a subject, to carefully pick our steps? Ours is a progressive age, and our profession has made enormous strides in the last decade. The discoveries of Pasteur, Koch and others, valuable as they are, have often not been immediately accepted. Prophylactic medicine is a branch of science that has a special bearing on our profession and on the well being of the country at large. In no carping spirit, but with the idea of giving your readers the views held on inoculation by some of the most prominent men in our profession in Great Britain, I have written, as I believe this side of the subject has not received much attention on this side of the Atlantic. In regard to the disease on this continent at the present time, all light should be shed on it that is possible, and should the benefits claimed for inoculation prove to be correct, a wonderful stride in our ability to arrest this formidable disease will have been achieved.

CORRESPONDENCE.

TWO DISTINCT SWINE PLAGUES CHARACTERIZED.

Editor of American Veterinary Review :

In connection with your editorial on hog cholera in the December number of the REVIEW, permit me to say that we have two diseases among hogs in this country which have heretofore been confounded as one plague.

One of these maladies is characterized by hepatization of the lungs, and is often accompanied by cirrhosis of the liver. It is caused by a germ quite similar in appearance to those which produce fowl cholera and rabbit septicæmia, though it is smaller. Germs of this form have been variously classed by good authorities as micrococci, bacteria, and bacilli. As between micrococci and bacilli, they certainly come nearer to the former. I wrote of the microbe of fowl cholera as a micrococcus, and have also referred to this swine disease germ in the same terms. This disease is quite similar to the *schweineseuche* of Germany, and may possibly be practically identical with it.

The second disease is the one described in the Report of the Bureau of Animal Industry for 1885. Its most characteristic lesion is the ulceration of the large intestine, particularly in the vicinity of the ileo-cæcal valve. In a small portion of the cases there are lung lesions which consist of congestion and of extravasation of blood. In this disease I have not found that hepatization of the lung which exists in the other. The germ of this disease is a short rod, quite distinct in appearance from the one found in the first-mentioned disease.

These two diseases are sometimes found to exist at the same time in the same herd of swine. The relation of these diseases to each other and the proportionate amount of loss caused by each, are questions for the future to decide.

As to which of these diseases Dr. Billings has studied in Nebraska, it is impossible to decide from his descriptions. The lung lesions which he mentions and the peculiar staining of the microbe would lead one to believe that he was working with a

disease similar to *schweineseuche*, while the ulceration of the large intestine and the growth of his microbe on potato are equally strong indications of the other disease. The germ of *schweineseuche* has no independent power of motion, while the germ of hog cholera is actively motile in liquid cultures. This is a very plain and essential difference, but the Doctor has not yet told us whether his germ is motile or non-motile. I see no way to reconcile his different statements except on the theory that he has had a mixed virus containing both microbes.

The apparent inconsistencies in my reports are due to the fact that I worked with two distinct diseases, which are caused by quite different micro-organisms. These two diseases have always been considered identical, and it is only recently that I have been able to secure a demonstration of their dissimilar nature, though I have suspected it for nearly two years.

Finally, it is surprising to me that gentlemen who make such claims to erudition as Dr. Billings and Dr. Bowhill should in their first report describe a parasite so well known and easily recognized as the *echinorynchus gigas* under the name of "ascaris suilla." The latter does not attach itself to the small intestine and cause lesions such as they describe.

D. E. SALMON.

VETERINARY LEGISLATION.

PATERSON, N. J., Jan. 18th, 1887.

Editor American Veterinary Review:

SIR:—In the December number of the REVIEW you kindly laid before your readers my article on veterinary legislation, and your January issue contained a letter written by the gentleman who drafted the veterinary bill which was passed by the New York Legislature last year. In this letter I was taken to task for taking the liberty of expressing my views on the New York State law. No doubt, Dr. Pendry framed the bill with the best of intentions, but, in my humble opinion, the bill as passed is injurious to the public, as well as to educated veterinarians, in

more than one respect. Quacks and educated veterinarians are put upon an equal *legal* footing, while the law is protective to graduates of the future.

I may be entirely wrong in my views on the subject of veterinary legislation, but even if such be the fact I have the consolation of knowing that there are plenty of veterinarians, from the various colleges, not only in New Jersey and New York, but throughout the United States, who entertain similar views to mine on the subject in question.

Only yesterday I received a letter from J. C. Meyer, Jr., M. D., D.V.S., of Cincinnati, Ohio, in which he says: "I admire your views, as expressed in the REVIEW of December, on veterinary legislation." Dr. Meyer would rather see a bill passed which would not go into effect for five years hence, and thereby allow non-graduates to qualify themselves, than to see one passed which would go into effect immediately but would allow quacks to register. How much better it would be if this had been done in New York State.

Dr. Chas. E. Munn, of Watertown, Dakota Territory, a graduate of the Ontario Veterinary College, has favored me with a long letter on the subject in question, from which I extract the following: "I have read in the December number of the AMERICAN VETERINARY REVIEW your article on veterinary legislation, and it coincides with my opinion on the subject so completely that I could not help writing you a few words to thank you for making public your views on the subject. I hardly think Dr. Pendry has helped his side of the question by his last article on the subject. As I understand it, the non-graduates who have taken advantage of the law by registering are placed on an equal footing, as far as Dr. Pendry's veterinary legislation is concerned, with graduates who have earned their right to practice at a cost of both time and money, to say nothing of hard brain work. This gives the registered quacks a chance to parade themselves before the public as being equal, lawfully of course, to qualified men. That is the point I do not like about this little bit of legislation. One *legalized* non-graduate I noticed in the list made his cross, presumably because he could not write his name. It does not seem right or

fair, in my opinion, to the young man who has studied hard, to say nothing of time and money expended to obtain a diploma from a veterinary college, that he has no more right legally to practice as a veterinary surgeon than this party who can't even write his own name, not to mention prescriptions. Of course, if empirics could not register at all, it would be hard on a few who are claimed to be as competent to practice as some graduates, but such men represent a *very* small number compared with the *large* number whom it is known are not competent, but who take advantage of a law evidently enacted for the benefit of the few who are. * * * * Even at this early date the law has been set aside to allow one negligent empiric to register, and, if for one, I suppose the same thing can be done for others in like predicament."

Shortly after my article appeared in the REVIEW I met Dr. Loblein, of New Brunswick, N. J., a most worthy graduate of the American Veterinary College, who endorsed my views on the subject.

Dr. A. M. Farrington, veterinary surgeon in charge of the United States Cattle Quarantine at Garfield, Bergen County, N. J., takes the same ground, as does my friend, Dr. I. Newton Krowl, of Passaic, N. J.

Montclair's popular veterinary surgeon, Dr. Mercier, graduate of the American Veterinary College, happened in my office this evening, when the subject was fully discussed. I am pleased to say that he, too, sees the subject in the light I do.

I could mention a number of others who have expressed their approval of my article on "Veterinary Legislation," as published in the REVIEW, but I fear, Mr. Editor, I have already trespassed too much upon your valuable space. Allow me to add, before concluding, that there are some veterinarians who at heart are strongly opposed to the quack element, yet they fear that if they express their views they might cause controversy, and therefore they remain silent.

Very respectfully yours,

WM. HERBERT LOWE, D.V.S.

SOCIETY MEETINGS.

MASSACHUSETTS VETERINARY ASSOCIATION.

The first meeting of the season was held at Boston, October 27th, 1886, at which formal organization under papers petitioning the State for a charter of incorporation took place. The board of officers chosen at the annual meeting in April was formally elected.

A report from the executive committee favoring the applications for membership of Samuel D. Lee, M.D.V., and Herbert M. Smith, M.D.V., was received, and by a unanimous vote the said gentlemen were elected to membership.

Dr. Lee then read a short paper, taking for his subject, "A few remarks on the diseases of dogs."

He first spoke of the sudden and complete paraplegia in dogs as a result of contipation. He said it was a condition never seen in the human subject. The dog being a very nervous animal, the irritation of impacted fæces caused paraplegia by reflex action of the nervous system. Cases were cited of paralysis of one hind leg, in which, purgation being produced, the paralysis ceased.

He also spoke of other nervous conditions, as convulsions, caused by foreign bodies in the ear, improper feeding, and by indigestion generally.

Canine distemper, or, as the essayist remarked, more properly called "canine influenza," was described at length, the nervous symptoms connected therewith receiving particular attention. He said that no lesions of brain or spinal cord had been found by him in post-mortem examinations of these cases.

In his opinion, canine influenza is not contagious, but may be epizootic. At the conclusion of the paper a vote of thanks to Dr. Lee was unanimously carried, and the meeting then adjourned.

The next meeting was held at Boston, November 18th, 1886, at which President F. H. Osgood presided, and a large number of members were present.

No important business was transacted, but a very interesting paper by H. M. Smith, M.D.V., of Haverhill, was listened to; subject, "Pyæmia and Septicæmia."

This was a very complete and exhaustive treatise of the subject. Beginning with its history, these diseases as noticed by ancient writers, and following down to the writings of authorities of modern times, the essayist in a clear manner differentiated the two conditions, entering fully into the etiology and especially the pathology of each.

The etiology of pyæmia he divided into four classes—mechanical, nervous, chemical, and the germ theory. There are two sources of contamination: through the wound, and by the vitiated atmosphere. He said that symptoms were different in character according to the character of pus injected; that the injection of fluid pus into *veins* would not produce metastatic abscesses, as had been proved by numerous experiments; that the injection of healthy pus would not produce metastatic abscess, as in the lungs, liver, etc., but that injections of ichorous pus certainly would.

The treatment of pyæmia and septicæmia, which is generally unsuccessful, he said, was touched upon in the conclusion of the paper.

Remarks complimentary of the paper were made by several of the gentlemen present, and a unanimous vote of thanks was tendered its author.

Dr. Blackwood showed a urinary calculus removed from a mare without the aid of instruments, and by simple dilatation of the meatus urinarius with the fingers. Considering the size of the calculus, this was rather remarkable. The stone was egg-shaped, and weighed 10 ounces, being $9\frac{1}{2}$ inches in its greater circumference, and $7\frac{3}{4}$ inches in its lesser circumference, and had for its centre a piece of an apple-tree twig, about the size of one's little finger. A portion of the twig, some 4 inches in length, was removed before the calculus. The only symptom noticed by the owners was a frequent urination by the animal, and this entirely ceased after the removal of the calculus, and the animal resumed its work, having been idle only four days.

Dr. Winchester mentioned some cases of tuberculosis following three generations, a calf nine months old of this family showing tubercles. He also said that he had found them in a foetus in the fourth month of its development, the placenta of the cow showing plenty of tubercles.

Dr. Osgood reported an interesting case of dislocation of the cervical vertebræ, and the animal had been in this condition several weeks when his attention was called to it, and health was otherwise perfect.

Meeting adjourned to fourth Wednesday in December.

December 22, 1886.—Meeting for reports of cases.

Vice-President J. S. Saunders presided, and there were present Doctors Bryden, Blackwood, Clements, Howard, Marshall, Peters, Saunders, Skally and Winchester.

Dr. Osgood at a previous meeting having suggested the advisability of issuing a certificate of membership to each member, the subject came up for discussion.

Drs. Clements and Peters said they had no objections to such a thing, but could see no particular use for it.

Dr. Bryden said the only objection would be the expense of getting up such certificate, but now that we are organizing as a corporation and hope to become of some influence and power in the State, it might be an honor to the holder, etc.

Dr. Winchester said it might be of advantage to a member leaving the State, as it could be used as a credential in joining other societies, and in New York State, where practitioners have now to be registered, it might be of use to a member locating there.

On motion of Dr. Winchester, it was voted that a committee of three be appointed by the Chair, to ascertain expense, and report on the form of a certificate of membership. The Chair appointed as that committee Doctors Peters, Marshall and Howard.

CASES REPORTED.

Dr. Winchester being called on, said that he wished to make a statement in regard to tuberculosis. That in his opinion it is a contagious, as well as a hereditary disease, and is as contagious as glanders. As a fact bearing out this asser-

tion, he said that a Guernsey bull affected with tuberculosis was brought into a certain herd of cattle, and in four years there were fifteen animals affected with the same disease. The herd was made up of native cattle, Guernseys, Jerseys and grades.

Dr. Peters said he coincided with Dr. Winchester's opinion. Many medical authorities deny while others assert that tuberculosis is contagious and infectious. He mentioned the case recorded of a child that had died of tuberculosis, and neither the father, mother nor any of its ancestors ever had it, but the child's nurse had for a long time been affected with it.

In cattle the disease is more contagious, as they expectorate on the grass and void their excreta on the same, and in this way the grass is a vehicle of contagion. In time, tuberculosis will be called as contagious as glanders or anthrax.

Dr. Winchester mentioned another case where a tuberculous cow was brought into a herd, and soon the entire herd was affected.

Dr. Peters mentioned finding tubercles on the placenta. He said he thought tuberculosis was also congenital, as in a three-weeks-old calf destroyed he found many tubercles in its lungs.

Dr. Bryden said that he was not aware that the medical profession questioned the contagiousness and infectiousness of tuberculosis. As comparing bovines with the human family, he thought that cows particularly were more susceptible to the contagium than a robust person. Their mode of life is not favorable to high muscular organization, and their surroundings lead in one case to plethora and in another to other deteriorating influences. He thought it would be interesting to take a herd of cows and one of steers, and see which would be the most susceptible.

Dr. Winchester said he would admit that surroundings have much to do with this disease, but we know that it is a specific disease, and the germ will produce it in an animal susceptible to the infection. The cause is the germ. Some say that tuberculosis is a disease of assimilation and nutrition, which is true, perhaps, but we see many cases where assimilation and nutrition are apparently perfect, and yet many tubercles are found in the different organs; and they may not have for their locations the digestive organs only, but may be located in the thoracic organs, while the digestive organs may be entirely free from them; sometimes they are found only in the udder; in other cases in the joints only; and when tuberculosis will develop itself in these different locations it is my opinion that assimilation and nutrition have little to do with it. It has been said also that the method of feeding and general care have much to do with developing this disease, but it is surely found where the hygienic and sanitary conditions are good, as where they are poor.

In answer to a question by Dr. Bryden if he regarded it as possible to develop tuberculosis without contact with or infection by another animal, Dr. Winchester said, in his opinion, "you must have the seed to raise the stuff," and it does not arise of itself.

Dr. Saunders asked if the experiment had ever been made of sending a tuberculous cow West into a healthy herd. The point being that our Eastern climate may have a special effect on the production of this disease, and perhaps it would be impossible to develop the malady among cattle in a climate less favorable to the progress of such diseases.

Dr. Winchester said that it is not necessary to introduce the germ by the respiratory track, as proved by the experiment of feeding the virus to animals and producing the disease, thus showing that it may be introduced by the digestive track.

Dr. A. W. Clements—lately returned from Berlin and Alfort—being called on for remarks on the subject, said that in Berlin it was agreed that tuberculosis is a contagious disease. Until lately Virchow has doubted it, but now is convinced; Koch has found its bacillus, inoculated and produced the disease. Koch also says that the bacillus is identical with that in tuberculosis affecting the human subject. Dr. Clements said he did not think the disease as contagious as glanders or anthrax; that is, the contagium is not so active. People working in a laboratory or dissecting room do not often contract tuberculosis from a subject, but sometimes do contract anthrax or glanders. The bacillus of tuberculosis develops more slowly than that of the other diseases mentioned. If the contagium of tuberculosis is denied, surely the germ theory must fall to the ground. In answer to a question, Dr. Clements said that the germ had been taken from a human subject and transferred to an animal and produced the disease. He also said a few cases of tuberculosis in horses had been found in Berlin, which cases were diagnosed by the presence of the germ. He also mentioned having seen many cases of lung trouble in cattle, as long standing broncho-pneumonia, for instance, in which nodules were found much resembling the tubercles of tuberculosis, but on microscopical examination they proved not to be tubercular.

Dr. Winchester suggested that perhaps in many cases our diagnosis was not correct, and what we have thought to be the lesions of tuberculosis may not have been.

Following the remarks on tuberculosis there were related several interesting cases: One of chorea in the horse, by Dr. Bryden; a peculiar case of spinal meningitis, by Dr. Skully; a case of azoturia, by Dr. Peters, post-mortem of which showed pus in both kidneys and a large abscess in the right one; a case of azoturia finally followed by spinal meningitis, related by Dr. Bryden; a case of azoturia, in which the animal was unable to rise for ten days, and finally made a complete recovery, reported by Dr. Winchester.

The meeting finally adjourned, to meet January 26, 1887.

L. H. HOWARD, Secretary.

ANNUAL DINNER ONTARIO VETERINARY COLLEGE.

The tenth annual dinner of the students of the Ontario Veterinary College was held in the Walker House on the evening of the 28th of January, there being present students from all parts of the Dominion of Canada, the United States and Australia.

Among the more prominent of the guests were Prof. Smith, Dr. Thorburn, Dr. Duncan, Dr. Richardson, Dr. Wright, Rev. Dr. Potts, Rev. Dr. Wild, Rev. Mr. Milligan, Dr. May, Prof. Sheard, of the Trinity Medical School; Dr. Cowan, V. S., Galt;

Ald. Piper, Ald. Frankland, and Messrs. Scott, of Acton, John Akers, E. P. Roden, and M. H. W. Wade, Secretary of the Agricultural and Arts Association.

The presidential chair was ably filled by Mr. Eugene Coffin, of Illinois, who, in the neat and appropriate speech with which he prefaced the toast of "the Queen," said that they, as students, had again assembled to do honor to their esteemed faculty and their distinguished friends. The vice-chairman, Mr. Walter Jex, of Brantford, Ontario, proposed the toast of the "President of the United States," which was responded to in an able manner by Mr. F. C. Wilkinson, of New Hampshire.

The toast of "the Governor-General of Canada" was proposed and replied to in a stirring speech by the Rev. Mr. Milligan, who remarked that the wide reputation that the Ontario Veterinary College was obtaining was due not only to the fact that the professors were worthy men, but that they had good material to work with.

The toast of "the Lieutenant-Governor of Ontario" was responded to by Dr. May, who referred in flattering terms to the manner in which the exhibits of the Ontario Veterinary College were received at the Indian and Colonial Exhibition in London last year.

The toast of "the American Consul" was well received, followed by "the Mayor and Corporation," Aldermen Frankland and Piper replying in humorous and neat addresses. The toast of "the Army, Navy and Reserve" brought the Rev. Dr. Wild to his feet, who responded to it in a happy manner. The other toasts were: "The Agriculture and Arts Association," replied to by Mr. H. W. Wade; "Our Professors," responded to by Professor Smith and faculty; "Our Professions" elicited replies from Rev. Dr. Potts, Professor Sheard and Mr. Akers; "The Students," replied to by Mr. S. L. Hunter, of New York, and Mr. T. D. Hinebauch, of Michigan; "Old Folks at Home" acknowledged by Mr. E. P. Roden, and the "Press" and the "Ladies."

It was at an early hour in the morning when the proceedings came to a close, and they all retired after having spent a most enjoyable evening.

VETERINARY LEGISLATION.

AN ACT TO REGULATE THE PRACTICE OF VETERINARY MEDICINE AND SURGERY IN THE STATE OF NEW JERSEY.

1. *Be it enacted by the Senate and General Assembly of the State of New Jersey*, That every person using the title of veterinary physician or surgeon, or practicing veterinary medicine or surgery in this State in any of their branches for gain, or who shall receive or accept for his services any fee or reward, either directly or indirectly, shall be a graduate of some legally chartered or incorporated veterinary college or university in good standing, or some veterinary society having power by law to grant diplomas, and such person before entering upon said practice shall deposit a true copy of his diploma with the Clerk of the county in which he may sojourn or reside, and shall pay said clerk ten cents for filing the same in his office; such copy to be a matter of record and open to public inspection.

2. *And be it enacted*, That any person who shall commence or continue to practice veterinary medicine or surgery without conforming to the requirements of the first section of this act shall be deemed guilty of a misdemeanor, and on conviction shall be punished by a fine of twenty-five dollars, or imprisonment in the county jail not exceeding six months, or both, in the discretion of the court, for each prescription made, operation performed or professional service rendered, which said fine shall be sued for and recovered in an action upon contract by any person who shall sue for the same, who shall be entitled to receive one-half of the amount recovered; *provided*, that any person who shall have had at least two years' experience immediately preceding the passage of this act in practicing veterinary medicine or surgery as a profession and means of livelihood in one locality in this State, and shall file with the clerk of the county in which he resides an affidavit, within six months after the passage of this act, setting forth the fact of such experience and length of practice, which shall be a matter of record and open to public inspection, shall be exempt from the requirements contained in section first of this act.

3. *And be it enacted*, That it shall be unlawful for any person not qualified according to the first or second sections of this act, to collect any fees for professional services rendered by him as a veterinary physician or surgeon.

4. *And be it enacted*, That any person who shall offer for record any affidavit provided for in this act in which he shall falsely swear or affirm, shall be deemed guilty of perjury, and on conviction thereof shall be liable to all the penalties provided by law therefor, or any person who shall offer for record the copy of any diploma issued or obtained fraudulently, shall be deemed guilty of a high misdemeanor, and on conviction thereof shall be punished by a fine not less than fifty dollars nor more than two hundred dollars, one-half of which shall go to the prosecutor, or imprisonment at hard labor for not less than six months nor more than two years, or both, at the discretion of the court.

5. *And be it enacted*, That nothing in this act shall be construed to prohibit students of veterinary medicine or surgery from prescribing under the supervision of preceptors, or prohibit the rendering of services in cases of emergency, or to prevent any veterinary physician or surgeon in good standing and legally qualified to practice veterinary medicine or surgery in the State in which he resides, from practicing in this State when incidentally called in, but any person opening an office or appointing any place for the transaction of business shall be deemed a sojourner in this State and shall conform to the first section of this act.

6. *And be it enacted*, That in order to secure to the State Board of Health a full record of all veterinary physicians and surgeons in this State, it shall be the duty of the county clerk of each county of the State to furnish to the State Board of Health a list of the names of all the veterinary physicians and surgeons who have deposited with him copies of their diplomas, together with the date of their respective diplomas, and the name and place of the institution purporting to confer such diploma, and each county clerk shall yearly furnish to the State Board of Health a similar list of those veterinary physicians and surgeons hereafter depositing diplomas with him, and shall include in such list also the name of those veterinary practitioners filing affidavits

with him, as mentioned in the second section of the act; and each county shall keep in a suitable book an index of the names of all veterinary physicians and surgeons depositing diplomas or filing affidavits in pursuance of the first and second sections of this act, and for every name indexed and furnished to the State Board of Health, as hereinbefore provided, the county clerk so indexing and furnishing such name shall be entitled to receive from the State Board of Health, through its secretary, the sum of six cents.

7. *And be it enacted*, That this act shall take effect on the first day of June, eighteen hundred and eighty-seven.

NEWS AND SUNDRIES.

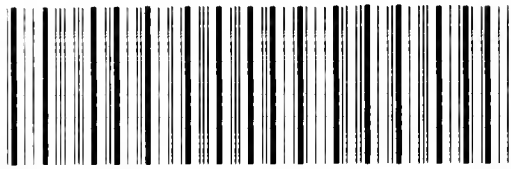
ENCOURAGEMENT.—The salary of the Chief of the Bureau of Animal Industry has been raised to \$3,500—mighty little for the work done.

TERRITORIAL VETERINARIAN OF MONTANA.—Governor Hauser, of Montana has sent to the council the nomination of Dr. Holloway to be Territorial Veterinarian, vice Dr. Kecfer.

MIGHT BE PRACTICED IN THE UNITED STATES.—The veterinary editor of the *North British Agriculturist* expresses his belief that the experiments sometime since undertaken at Shropshire, with a view of testing the value of inoculation as a preventive of quarter-ill, have proved successful. A number of the inoculated animals were recently re-inoculated with the virus from a calf just dead of the natural disease, and none of them were affected by it in the slightest degree. At the same time three other calves, not previously operated upon, were inoculated with the same virus, and all of them developed the disease, two of them dying within forty-eight hours. The disease is a great scourge to young cattle in this country, and if the system of inoculation can be so perfected as to be safe of application in the hands of general farmers, and proves to be as efficacious as these experiments and some others reported from France would seem to indicate, it will be a great boon to cattle-growers.

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